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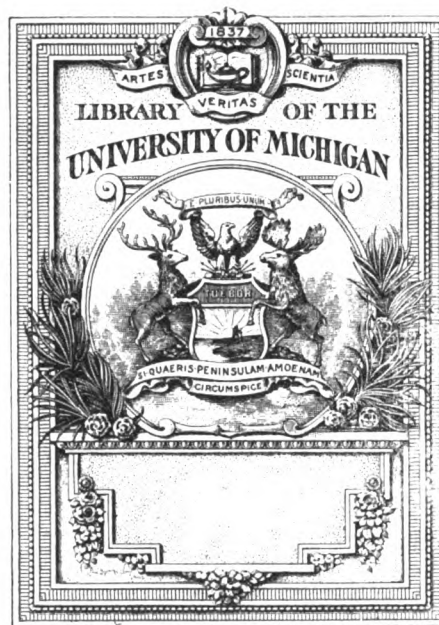
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ASTRONOMICAL PAPERS

1898 3

PREPARED FOR THE USE OF THE

AMERICAN EPHEMERIS AND NAUTICAL ALMANAC

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TABLES
OF
JUPITER,
CONSTRUCTED IN ACCORDANCE WITH THE METHODS OF HANSEN,
AND PREPARED FOR USE IN THE OFFICE OF THE AMERICAN EPHEMERIS
AND NAUTICAL ALMANAC,
BY
GEORGE WILLIAM HILL,
ASSISTANT AMERICAN EPHEMERIS.

PREFATORY NOTE.

These tables are the first to appear, though not the first in order, of a series intended to include the eight major planets of the solar system, and possibly the Moon and satellites. The theory on which they are founded is that developed in Vol. IV of the present series of Papers. The general plan has been to have all the tables based on uniform values of the masses and uniform positions and motions of the planes and points of reference. Although this condition will, it is hoped, be absolutely fulfilled in the case of the Sun and inner planets, it has not been practicable to await the final determinations of the constants before constructing the tables of Jupiter and Saturn. The latter are therefore founded on data which may deviate slightly from those finally adopted, which are soon to be published as a supplement to the *American Ephemeris*. It is believed that the only material deviations will prove to be, (1) that the longitudes are not referred rigorously to the adopted equinox; (2) that the masses of Uranus and Neptune, and, possibly, that of Saturn, may be slightly changed when the theories of the two outer planets are constructed. The first deviation will be very minute, and will not affect the theory on which the tables are based.

As the work was entirely done by Mr. HILL, and it was not practicable for the Director to keep a mastery over it as it went along, he has deemed it proper to let the responsibility for it rest with Mr. HILL as author.

SIMON NEWCOMB,
Director Nautical Almanac.

NAUTICAL ALMANAC OFFICE,
U. S. NAVAL OBSERVATORY,
Washington, May, 1895.

DISCUSSION OF THE OBSERVATIONS OF JUPITER WITH RESULTING VALUES FOR THE ELEMENTS OF THE ORBIT AND THE MASS OF SATURN.

The material employed in this discussion was derived from the published work of the following eleven observatories—the intervals of time covered by it, together with the number of observations employed in right ascension and declination, are added:

		R. A.	Dec.
Greenwich	1750–1888	2172	2131
Palermo	1791–1809	96	92
Paris	1801–1883	1064	1039
Königsberg	1814–1848	204	175
Cambridge	1828–1865	386	233
Capetown	1834–1860	47	75
Edinburgh	1834–1844	240	166
Berlin	1838–1845	49	49
Oxford	1840–1876	131	133
Washington	1845–1884	404	360
Brussels	1855–1865	67	34
Whole number of observations,		4860	4487

Only those observations were included for which the planet culminated between 16^h and 8^h of local time. An exception, however, was made in the case of the Greenwich observations in the time of BRADLEY.

The right ascensions were reduced to the standard of Prof. NEWCOMB's *Right Ascensions of the Equatorial Fundamental Stars*, and the declinations to Prof. BOSS's standard.

Provisional Tables having been constructed from the theory in *Astronomical Papers*, Vol. IV, the observations of the interval 1750–1829 were compared directly with isolated places or an ephemeris computed from these tables. For the interval 1830–1888, however, it has been preferred to compare the single observations with the ephemeris contained in the *Berliner Jahrbuch* (1830–1833) or the *Nautical Almanac* (1834–1888), and thus combine the material into normals. The provisional theory was then compared with these normals.

The equations of condition, formed one for each opposition, except in the time of BRADLEY, when sometimes additional ones were formed for quadratures, contain seven unknown quantities, the notation of which is explained as follows:

- x_1 = the correction of the mean longitude for 1850.0,
- x_2 = the correction of the mean motion for a century,
- x_3 = the correction of the eccentricity expressed in seconds of arc,
- x_4 = the correction of the longitude of the perihelion multiplied by the eccentricity,
- x_5 = the correction of the inclination,
- x_6 = the correction of the longitude of the ascending node multiplied by the sine of the inclination,

$1 + \frac{x_7}{1000''}$ = the factor by which the mass of Saturn $\frac{1}{3501.6}$ must be multiplied.

In order to avoid a near approach to indetermination in the solution of the equations of condition the coefficients of x_7 have been derived from the perturbations of Jupiter by the action of Saturn, as they are given, not by excesses over coordinates from the mean elements, but by excesses over coordinates from elements osculating at about the middle of the period of observation. It has been found the readiest method of obtaining these coefficients to compute elliptic positions of Jupiter for the times of the equations of condition from such a set of osculating elements, and to subtract the coordinates thus obtained from the actual coordinates of the planet diminished by the small corrections arising from the action of Uranus and Neptune.

The system of osculating element employed is the following:

$$\begin{aligned}
 \text{Epoch} &= 1850, \text{ Jan. 0.0, Greenwich M. T.} \\
 L &= 160^\circ 14' 20''.91 \\
 \pi &= 12 \quad 7 \quad 33.39 + 0''.146t, \\
 \Omega &= 98 \quad 54 \quad 7.20 - 19.858t - 1''.11T^2, \\
 \log \sin i &= 8.3598404 - 114.12t + 18T^2, \\
 \log a &= 0.7162419, \\
 e &= 0.0485753, \\
 n &= 109254''.93824.
 \end{aligned}$$

In these elements the terms involving t express the secular action of Uranus and Neptune as well as the effect of the motion of the ecliptic.

The formula for passing from the correction δL_0 of an osculating element L_0 to the corresponding correction δL_m of the mean element L_m is very simple. If $1 + \mu$ denotes the multiplier by which the mass of Saturn ought to be multiplied, the formula is

$$\delta L = \delta L_0 + \mu (L_m - L_0)$$

The equations which have been formed, together with the dates to which they correspond, are given below. It is to be noted that to the left members of each of the equations which are derived from the declinations must be added a term which denotes the correction to Prof. Boss's standard declinations. For convenience

this term will be supposed constant through a period equivalent to about a revolution of Jupiter, and the value obtained by the solution of the equations will be attributed to the middle of the period. These corrections then will be thus denoted:

1750-1765	$-x_8,$	1826-1837	$-x_{14},$
1766-1777	$-x_9,$	1838-1849	$-x_{15},$
1778-1789	$-x_{10},$	1850-1861	$-x_{16},$
1790-1801	$-x_{11},$	1862-1873	$-x_{17},$
1802-1813	$-x_{12},$	1874-1888	$-x_{18},$
1814-1825	$-x_{13},$		

The absolute terms of the equations which are derived from the right ascensions are $\Delta\alpha \cos \delta$, and the absolute terms of those which come from the declinations are $\Delta\delta$. For brevity the sign of equality and the zero which constitutes the right member of the equation are omitted. The number of observations on which each equation depends, together with the weight allowed to the latter in the discussion, will be given with the statement of the final residuals.

Equations from the Right Ascensions.

	$x_1.$	$x_2.$	$x_3.$	$x_4.$	$x_5.$	$x_6.$	$x_7.$	"
1750 Nov. 19	1.234	-1.223	+0.759	-2.265	+0.404	+0.196	-0.402	+0.56
1751 Aug. 17	0.984	0.981	1.523	1.242	0.111	0.129	0.233	-2.33
Nov. 20	1.297	1.273	2.054	1.475	0.120	0.194	0.289	-0.46
1752 Feb. 7	1.082	1.059	1.738	1.226	+0.099	+0.209	0.239	+0.17
Sept. 22	0.963	0.937	1.928	0.168	-0.007	-0.073	0.115	-0.77
1753 Jan. 2	1.237	1.200	2.470	0.089	+0.003	0.070	0.135	+1.52
Mar. 29	0.994	0.962	1.993	-0.013	0.005	0.030	0.103	+1.74
Oct. 19	0.868	0.835	1.582	+0.808	0.118	0.237	0.028	-0.06
1754 Jan. 31	1.126	1.080	1.978	1.165	0.121	0.270	-0.027	+3.85
Dec. 5	0.841	0.800	0.870	1.515	0.329	0.199	+0.005	-2.11
1755 Apr. 17	0.976	0.924	0.966	1.774	0.395	0.152	+0.002	+0.38
Dec. 17	0.789	0.742	+0.014	1.643	0.368	-0.016	-0.020	+0.25
1756 Apr. 20	1.009	0.946	-0.098	2.094	0.471	+0.057	0.033	-1.81
1757 Jan. 2	1.013	0.942	1.008	1.839	0.330	0.164	0.076	-0.74
May 13	1.074	0.994	1.236	1.839	0.311	0.229	0.122	-1.01
June 15	0.984	0.910	1.126	1.696	0.297	0.240	0.112	+1.02
1758 Mar. 27	1.017	0.933	1.880	0.870	0.055	0.100	0.201	-2.93
June 14	1.173	1.074	2.175	0.980	0.067	0.161	0.236	-1.77
July 28	1.088	-0.995	-2.080	+0.729	+0.062	+0.179	-0.231	+0.03

Equations from the Right Ascensions—Continued.

	x_1	x_2	x_3	x_4	x_5	x_6	x_7	"
1759 July 14	1.255	-1.136	-2.471	-0.382	+0.022	-0.128	-0.329	-0.61
Sept. 20	1.072	0.968	2.116	0.369	0.022	0.078	0.276	+1.18
1760 Aug. 16	1.273	1.137	1.812	1.700	0.272	0.277	0.306	+2.16
Nov. 25	0.986	0.879	1.312	1.416	0.243	0.179	0.227	+2.88
1761 July 13	1.079	0.955	0.438	2.045	0.414	0.116	0.158	+1.20
Sept. 12	1.262	1.116	0.476	2.393	0.486	0.086	0.180	+1.24
Dec. 6	1.051	0.925	-0.371	2.004	0.414	-0.017	0.145	+1.58
1762 Oct. 30	1.284	1.119	+1.011	2.272	0.377	+0.198	-0.033	+1.49
1763 Dec. 2	1.289	1.110	2.169	-1.307	0.086	+0.171	+0.046	+1.27
1765 Feb. 1	1.187	1.008	2.377	+0.081	0.013	-0.080	-0.003	+3.33
1766 Feb. 3	1.112	0.933	1.873	0.929	0.221	0.273	0.077	+2.12
1767 Mar. 8	1.035	0.857	+0.858	1.961	0.442	-0.162	0.172	+0.89
1768 Apr. 6	1.029	0.841	-0.275	2.116	0.464	+0.079	0.232	-0.03
1769 May 9	1.091	0.880	1.396	1.762	0.275	0.231	0.237	+1.51
1770 June 10	1.192	0.949	2.277	+0.810	0.040	+0.118	-0.152	+0.62
1771 July 14	1.262	0.991	2.435	-0.587	0.044	-0.173	+0.026	-0.03
1772 Aug. 28	1.268	0.981	1.657	1.833	0.314	0.263	0.224	-0.88
1773 Sept. 28	1.269	0.968	-0.283	2.432	0.494	-0.034	0.359	+0.73
1774 Nov. 3	1.288	0.968	+1.206	2.187	0.337	+0.217	0.384	+0.35
1775 Dec. 9	1.286	0.952	2.256	-1.150	0.056	+0.140	0.281	+1.49
1777 Jan. 9	1.207	0.881	2.409	+0.297	0.032	-0.153	+0.096	+1.27
1778 Feb. 7	1.096	0.788	1.737	1.423	0.262	0.276	-0.073	+1.06
1779 Mar. 12	1.029	0.728	+0.708	2.011	0.459	-0.131	0.163	-1.87
1780 Apr. 17	1.032	0.719	-0.422	2.098	0.448	+0.116	-0.164	+0.03
1782 June 16	1.205	0.814	2.352	+0.636	0.021	+0.081	+0.168	+1.08
1783 July 17	1.266	0.841	2.378	-0.788	0.072	-0.210	0.410	+0.50
1784 Aug. 24	1.271	0.831	1.534	1.940	0.348	-0.249	0.512	-0.72
1785 Oct. 1	1.271	0.816	-0.072	2.451	0.493	+0.009	0.432	+2.20
1786 Nov. 7	1.292	0.816	+1.392	2.085	0.295	0.228	+0.222	-1.11
1787 Dec. 12	1.279	0.794	2.347	-0.936	0.031	+0.101	-0.034	+3.13
1789 Jan. 14	1.192	0.726	2.354	+0.475	0.055	-0.186	-0.210	+1.06
1790 Feb. 15	1.083	0.649	1.610	1.531	0.297	0.267	0.258	+2.16
1791 Mar. 15	1.025	-0.603	+0.553	+2.051	+0.472	-0.099	-0.194	+1.40

Equations from the Right Ascensions—Continued.

	x_1 .	x_2 .	x_3 .	x_4 .	x_5 .	x_6 .	x_7 .	"
1792 Apr. 28	1.035	-0.597	-0.577	+2.067	+0.429	+0.149	-0.061	+0.91
1793 May 22	1.117	0.632	1.679	1.561	0.201	0.231	+0.127	+2.70
1794 June 18	1.218	0.676	2.412	+0.451	0.006	+0.037	0.328	+1.91
1795 July 26	1.269	0.691	2.307	-0.975	0.105	-0.236	0.450	+0.03
1796 Sept. 7	1.266	0.675	-1.317	2.074	0.392	-0.225	0.423	+0.28
1797 Oct. 6	1.273	0.665	+0.141	2.452	0.484	+0.052	0.274	+2.38
1798 Nov. 12	1.294	0.661	1.569	1.967	0.252	0.233	+0.081	+2.18
1799 Dec. 19	1.270	0.635	2.404	-0.740	0.013	+0.062	-0.066	+0.29
1801 Jan. 31	1.171	0.573	2.280	+0.643	0.082	-0.203	0.091	+1.20
1802 Feb. 28	1.071	0.512	1.479	1.630	0.331	0.250	-0.017	+2.66
1803 Mar. 28	1.023	0.478	+0.404	2.081	0.480	-0.060	+0.071	+2.84
1804 Apr. 26	1.045	0.477	-0.745	2.031	0.403	+0.169	0.081	+1.20
1805 May 25	1.132	0.493	1.815	1.442	+0.164	+0.218	+0.022	-0.04
1806 June 23	1.229	0.535	2.455	+0.257	-0.001	-0.006	-0.138	-0.34
1807 Aug. 1	1.271	0.539	2.215	-1.160	+0.142	0.257	0.322	+1.57
1808 Sept. 14	1.265	0.522	-1.134	2.173	0.424	-0.194	0.436	+0.73
1809 Oct. 17	1.274	0.512	+0.345	2.436	0.468	+0.097	0.436	+0.93
1810 Nov. 23	1.294	0.506	1.731	1.837	0.209	0.234	0.311	+2.80
1811 Dec. 25	1.264	0.481	2.447	-0.540	0.002	+0.019	-0.100	+1.73
1813 Feb. 20	1.131	0.417	2.154	+0.782	0.109	-0.209	+0.092	+2.03
1814 Feb. 23	1.060	0.380	1.334	1.729	0.364	0.241	0.203	-0.03
1815 Mar. 30	1.022	0.355	+0.245	2.106	0.483	-0.026	0.215	+0.96
1816 Apr. 24	1.057	0.337	-0.907	1.989	0.375	+0.187	0.145	+0.49
1817 May 30	1.147	0.374	1.944	1.312	0.129	+0.202	+0.015	+3.45
1818 June 1	1.238	0.390	2.480	+0.065	0.000	-0.046	-0.174	-1.20
1819 Aug. 27	1.227	0.372	2.104	-1.267	0.170	0.238	0.278	+0.52
1820 Sept. 26	1.265	0.370	-0.950	2.258	0.463	-0.158	0.286	+1.25
1821 Nov. 5	1.258	0.354	+0.533	2.372	0.441	+0.145	-0.152	+1.03
1822 Dec. 9	1.278	0.346	1.851	1.677	0.167	+0.231	+0.003	+3.18
1824 Jan. 14	1.236	0.321	2.436	-0.350	0.000	-0.008	0.089	+1.65
1825 Feb. 3	1.144	0.285	2.109	+0.975	0.148	0.253	0.079	+1.97
1826 Mar. 16	1.043	0.248	1.199	1.785	0.389	-0.206	+0.013	+1.31
1827 Apr. 4	1.021	-0.232	+0.089	+2.118	+0.482	+0.010	-0.059	+0.78

Equations from the Right Ascensions—Continued.

	x_1 .	x_2 .	x_3 .	x_4 .	x_5 .	x_6 .	x_7 .	"
1828 May 17	1.051	-0.227	-1.034	+1.914	+0.345	+0.217	-0.109	+0.09
1829 June 10	1.149	0.236	2.033	+1.165	0.097	+0.186	0.114	-0.13
1830 July 24	1.230	0.239	2.458	-0.118	0.007	-0.069	-0.046	-0.51
1831 Aug. 26	1.261	0.231	1.976	1.485	0.223	0.265	+0.085	-1.48
1832 Oct. 3	1.252	0.216	-0.744	2.305	0.469	-0.114	0.221	-0.71
1833 Nov. 2	1.276	0.206	+0.754	2.347	0.414	+0.172	0.312	-0.61
1834 Dec. 11	1.283	0.193	1.997	1.521	0.127	+0.210	0.317	+0.28
1836 Jan. 20	1.221	0.170	2.434	-0.153	0.003	-0.050	0.227	+0.43
1837 Feb. 14	1.124	0.145	2.000	+1.112	0.183	0.258	+0.113	+1.14
1838 Mar. 24	1.030	0.121	+1.096	1.852	0.413	-0.179	-0.007	+0.57
1839 Apr. 19	1.016	0.109	-0.060	2.107	0.473	+0.051	0.054	+0.50
1840 May 17	1.069	0.099	1.192	1.856	0.311	0.228	-0.025	+0.80
1841 June 10	1.175	0.101	2.160	+1.020	0.067	+0.154	+0.098	-0.04
1842 July 20	1.250	0.093	2.470	-0.327	0.021	-0.122	0.279	-0.97
1843 Aug. 28	1.264	0.080	1.843	1.646	0.267	0.270	0.399	-0.65
1844 Sept. 25	1.267	0.067	-0.540	2.387	0.487	-0.083	0.383	-1.06
1845 Oct. 23	1.286	0.054	+0.973	2.291	0.378	+0.187	0.248	-0.11
1846 Dec. 18	1.277	0.039	2.110	-1.350	0.091	+0.186	+0.057	+0.58
1848 Jan. 16	1.221	0.024	2.444	+0.048	0.013	-0.102	-0.103	+1.13
1849 Feb. 19	1.108	-0.010	1.887	1.248	0.219	0.264	0.136	+1.41
1850 Mar. 22	1.030	+0.002	+0.903	1.930	0.437	-0.157	0.130	+0.71
1851 Apr. 28	1.012	0.013	-0.213	2.090	0.461	+0.087	-0.023	+1.40
1852 May 11	1.090	0.026	1.363	1.785	0.276	0.228	+0.104	+0.69
1853 June 13	1.189	0.041	2.256	+0.854	0.041	+0.119	0.255	+0.57
1854 Aug. 9	1.230	0.057	2.395	-0.507	0.040	-0.144	0.344	-0.20
1855 Sept. 7	1.255	0.071	1.686	1.777	0.308	0.257	0.329	-0.47
1856 Oct. 5	1.264	0.085	-0.358	2.417	0.493	-0.028	0.135	-1.03
1857 Nov. 8	1.286	0.101	+1.154	2.208	0.341	+0.216	+0.048	-0.86
1858 Dec. 24	1.271	0.114	2.210	-1.171	0.060	+0.156	-0.080	+0.05
1860 Jan. 31	1.192	0.120	2.383	+0.227	0.029	-0.128	0.130	+0.04
1861 Mar. 3	1.085	0.121	1.756	1.357	0.254	0.256	-0.020	+0.84
1862 Apr. 12	0.998	0.123	+0.742	1.930	0.445	-0.113	+0.097	-0.12
1863 Apr. 30	1.020	+0.136	-0.372	+2.083	+0.446	+0.117	+0.175	-0.25

Equations from the Right Ascensions—Continued.

	x_1 .	x_2 .	x_3 .	x_4 .	x_5 .	x_6 .	x_7 .	"
1864 May 29	1.089	+0.157	-1.482	+1.682	+0.240	+0.240	+0.093	-0.48
1865 July 1	1.188	0.184	2.308	+0.685	0.024	+0.097	-0.027	-0.61
1866 July 29	1.260	0.209	2.390	-0.724	0.068	-0.196	0.295	-1.73
1867 Sept. 8	1.260	0.223	1.512	1.929	0.352	-0.248	0.534	-2.04
1868 Oct. 10	1.266	0.238	-0.130	2.439	0.492	+0.009	0.639	-0.67
1869 Nov. 17	1.285	0.256	+1.333	2.106	0.300	0.233	0.580	-0.30
1870 Dec. 14	1.282	0.269	2.331	-0.984	0.033	+0.103	0.368	-0.15
1872 Feb. 12	1.161	0.257	2.306	+0.402	0.050	-0.154	-0.082	+0.04
1873 Mar. 18	1.051	0.244	1.602	1.441	0.284	0.240	+0.124	+0.15
1874 Apr. 6	1.012	0.246	+0.600	2.010	0.465	-0.089	0.224	+0.08
1875 May 8	1.020	0.259	-0.525	2.050	0.425	+0.148	0.209	-0.52
1876 May 28	1.110	0.293	1.637	1.587	0.204	0.233	+0.088	-0.55
1877 June 26	1.213	0.333	2.394	+0.502	0.008	+0.047	-0.146	-1.41
1878 Aug. 9	1.256	0.359	2.312	-0.908	0.100	-0.219	0.392	-2.12
1879 Sept. 16	1.255	0.373	-1.356	2.026	0.385	-0.221	0.530	-1.53
1880 Oct. 22	1.258	0.388	+0.074	2.427	0.482	+0.058	0.493	-0.89
1881 Nov. 26	1.281	0.409	1.502	1.987	0.257	0.241	0.332	-0.90
1882 Dec. 23	1.273	0.420	2.391	-0.792	0.015	+0.067	0.155	-0.72
1884 Feb. 15	1.150	0.392	2.250	+0.578	0.077	-0.186	0.071	+0.06
1885 Mar. 5	1.067	0.375	1.506	1.593	0.326	0.248	0.041	+1.14
1886 Apr. 11	1.008	0.366	+0.447	2.041	0.473	-0.054	0.083	+0.61
1887 Apr. 29	1.044	0.390	-0.701	2.045	0.405	+0.167	0.152	+0.11
1888 May 25	1.134	+0.435	-1.813	+1.450	+0.158	+0.207	-0.221	-0.38

Equations from the Declinations.

	x_1 .	x_2 .	x_3 .	x_4 .	x_5 .	x_6 .	x_7 .	"
1750 Nov. 19	+0.486	-0.481	+0.296	-0.892	-1.028	-0.476	-0.162	+1.05
1751 Aug. 17	0.178	0.176	0.270	0.225	0.623	0.725	0.040	-2.18
Nov. 20	0.238	0.234	0.376	0.276	0.651	1.032	0.048	-4.33
1752 Feb. 7	+0.241	-0.236	+0.389	-0.270	0.446	0.941	-0.046	+0.72
Sept. 22	-0.072	+0.070	-0.144	+0.009	-0.097	0.968	+0.018	-3.58
1753 Jan. 2	0.071	0.068	0.141	0.006	+0.061	1.231	0.023	-2.07
Mar. 29	0.029	0.028	0.058	+0.005	0.175	0.996	0.017	+0.21
Oct. 19	-0.248	+0.239	-0.452	-0.235	+0.412	-0.825	+0.021	+0.13

Equations from the Declinations—Continued.

		x_1	x_2	x_3	x_4	x_5	x_6	x_7	"
1754	Jan. 31	-0.313	+0.300	-0.552	-0.321	+0.675	-0.970	+0.026	-0.91
	Dec. 5	0.348	0.331	0.359	0.628	0.795	0.481	0.011	-0.48
1755	Apr. 17	0.384	0.364	0.385	0.696	1.000	0.385	0.012	-0.39
	Dec. 17	0.332	0.312	-0.006	0.691	0.880	-0.039	0.015	-0.47
1756	Apr. 20	0.430	0.403	+0.034	0.892	1.105	+0.134	0.019	+0.48
1757	Jan. 2	0.335	0.311	0.336	0.606	0.998	0.495	0.024	+1.58
	May 13	0.356	0.330	0.406	0.612	0.937	0.690	0.036	+0.50
	June 15	0.349	0.323	0.399	0.603	0.840	0.676	0.036	+1.01
1758	Mar. 27	0.109	0.100	0.199	0.098	0.519	0.942	0.014	-1.71
	June 14	0.167	0.153	0.308	0.141	0.468	1.128	0.024	-0.13
	July 28	-0.184	+0.168	+0.352	0.120	+0.366	1.063	+0.032	+0.20
1759	July 14	+0.131	-0.119	-0.259	0.039	-0.212	1.219	-0.045	-0.28
	Sept. 20	0.079	0.071	0.158	0.022	0.290	1.034	0.031	-0.55
1760	Aug. 16	0.415	0.371	0.595	0.551	0.834	0.849	0.114	-0.29
	Nov. 25	0.319	0.284	0.428	0.455	0.748	0.554	0.084	+0.46
1761	July 13	0.465	0.411	0.190	0.881	0.962	0.269	0.078	+0.42
	Sept. 12	0.544	0.480	0.214	1.028	1.130	0.201	0.089	+0.29
	Dec. 6	0.447	0.394	-0.160	0.853	0.971	+0.039	0.070	+0.63
1762	Oct. 30	0.466	0.406	+0.360	0.827	1.040	-0.546	-0.012	0.00
1763	Dec. 2	+0.201	-0.173	+0.337	0.207	-0.551	1.095	+0.017	-1.46
1765	Feb. 1	-0.080	+0.068	-0.160	0.001	+0.198	1.179	0.014	-1.16
1766	Feb. 3	0.332	0.279	0.559	0.386	0.740	0.912	0.036	0.00
1767	Mar. 8	0.431	0.357	-0.363	0.814	1.060	-0.390	0.081	-2.27
1768	Apr. 6	0.428	0.349	+0.109	0.881	1.115	+0.191	0.102	-1.16
1769	May 9	0.332	0.268	0.421	0.540	0.901	0.757	0.072	-2.16
1770	June 10	-0.121	+0.096	+0.230	0.084	+0.396	1.166	+0.008	-1.78
1771	July 14	+0.183	-0.143	-0.353	0.084	-0.303	1.196	-0.012	-2.29
1772	Aug. 28	0.439	0.340	0.584	0.627	0.905	0.756	+0.058	-0.67
1773	Sept 28	0.546	0.417	-0.130	1.047	1.148	+0.079	0.145	-1.56
1774	Nov. 3	0.437	0.328	+0.403	0.745	0.995	-0.639	0.137	+4.52
1775	Dec. 9	+0.158	-0.117	+0.276	0.143	-0.453	1.144	0.051	+2.95
1777	Jan. 9	-0.155	+0.113	-0.308	0.037	+0.251	1.195	0.004	-0.12
1778	Feb. 7	-0.358	+0.257	-0.570	-0.461	+0.801	-0.846	+0.035	-1.58

Equations from the Declinations—Continued.

	x_1 .	x_2 .	x_3 .	x_4 .	x_5 .	x_6 .	x_7 .	"
1779 Mar. 12	-0.436	+0.308	-0.305	-0.850	+1.083	-0.309	+0.077	-1.96
1780 Apr. 17	0.422	0.294	+0.166	0.858	1.098	+0.283	+0.071	-0.50
1782 June 16	-0.082	+0.055	+0.159	0.044	+0.302	1.199	-0.025	-0.09
1783 July 17	+0.229	-0.152	-0.431	0.140	-0.397	1.162	+0.052	-0.44
1784 Aug. 24	0.462	0.302	0.547	0.714	0.957	+0.686	0.168	-7.22
1785 Oct. 1	0.544	0.349	-0.039	1.048	1.152	-0.021	0.182	-2.00
1786 Nov. 7	0.405	0.256	+0.431	0.657	0.941	0.728	0.079	-0.79
1787 Dec. 12	+0.110	-0.068	+0.200	0.082	-0.360	1.180	0.007	+0.38
1789 Jan. 14	-0.190	+0.116	-0.376	0.074	+0.345	1.165	0.041	+1.32
1790 Feb. 15	0.374	0.224	0.559	0.525	0.861	0.774	0.095	-2.77
1791 Mar. 15	0.439	0.258	-0.243	0.877	1.101	-0.231	0.089	-1.90
1792 Apr. 28	0.413	0.238	+0.225	0.826	1.074	+0.372	+0.025	-0.73
1793 May 22	0.286	0.162	0.428	0.403	0.783	0.900	-0.041	+1.92
1794 June 18	-0.037	+0.020	+0.073	0.015	+0.206	1.222	-0.028	+0.83
1795 July 26	+0.268	-0.146	-0.488	0.203	-0.497	1.116	+0.073	+0.13
1796 Sept. 7	0.490	0.261	-0.517	0.800	1.011	+0.579	0.150	-0.64
1797 Oct. 6	0.536	0.280	+0.051	1.034	1.147	-0.124	0.115	+0.13
1798 Nov. 12	0.370	0.189	0.444	0.566	0.880	0.813	0.031	-0.72
1799 Dec. 19	+0.066	-0.033	+0.124	0.039	-0.256	1.207	0.006	+0.73
1801 Jan. 31	-0.213	+0.104	-0.415	0.211	+0.449	1.117	0.026	+0.84
1802 Feb. 28	0.386	0.184	0.538	0.582	0.917	0.693	+0.016	-1.56
1803 Mar. 28	0.440	0.206	-0.170	0.896	1.115	-0.139	-0.025	-0.69
1804 Apr. 26	0.399	0.182	+0.278	0.778	1.054	+0.443	0.031	+2.76
1805 May 25	-0.257	+0.115	+0.410	0.330	0.722	0.961	0.009	+0.30
1806 June 23	+0.006	-0.003	-0.012	0.000	+0.115	1.236	0.004	+0.39
1807 Aug. 1	0.307	0.130	0.537	0.277	-0.586	1.064	0.079	+0.31
1808 Sept. 14	0.508	0.210	-0.463	0.870	1.054	+0.484	0.176	+1.02
1809 Oct. 17	0.526	0.212	+0.134	1.007	1.132	-0.236	0.185	-0.15
1810 Nov. 23	0.337	0.132	0.447	0.482	0.804	0.899	-0.085	+1.07
1811 Dec. 25	+0.019	-0.007	+0.037	0.009	-0.155	1.227	+0.002	-0.86
1813 Feb. 20	-0.227	+0.084	-0.433	0.153	+0.544	1.040	+0.005	-2.15
1814 Feb. 23	0.405	0.145	0.514	0.657	0.954	0.632	-0.067	-1.65
1815 Mar. 30	-0.440	+0.153	-0.112	-0.906	+1.123	-0.060	-0.088	-1.94

Equations from the Declinations—Continued.

	x_1 .	x_2 .	x_3 .	x_4 .	x_5 .	x_6 .	x_7 .	"
1816 Apr. 24	-0.384	+0.129	+0.324	-0.725	+1.032	+0.515	-0.055	-0.53
1817 May 30	-0.227	+0.074	+0.383	-0.263	0.650	1.020	0.007	+1.69
1818 July 1	+0.046	-0.014	-0.092	+0.002	+0.009	1.242	0.009	+1.28
1819 Aug. 27	0.301	0.112	0.514	-0.315	-0.695	0.970	0.070	-0.18
1820 Sept. 26	0.534	0.156	-0.409	0.950	1.095	+0.375	0.125	-0.10
1821 Nov. 5	0.509	0.143	+0.209	0.961	1.088	-0.357	-0.066	+0.14
1822 Dec. 9	+0.304	-0.082	+0.438	-0.400	0.702	0.972	+0.001	+0.07
1824 Jan. 14	-0.008	+0.002	-0.015	+0.004	-0.025	1.221	+0.003	-0.97
1825 Feb. 3	0.282	0.070	0.521	-0.237	+0.602	1.028	-0.015	-0.49
1826 Mar. 16	0.405	0.096	0.471	0.691	0.999	-0.530	-0.003	-0.46
1827 Apr. 4	0.437	0.099	-0.044	0.907	1.124	+0.023	+0.027	-0.92
1828 May 17	0.373	0.081	+0.363	0.681	0.970	0.611	0.041	+0.56
1829 June 10	-0.199	+0.041	+0.351	0.205	+0.558	1.069	+0.021	0.00
1830 July 24	+0.069	-0.013	-0.139	0.004	-0.123	1.221	-0.004	+0.31
1831 Aug. 26	0.366	0.067	0.578	0.427	0.766	0.912	+0.020	+0.28
1832 Oct. 3	0.528	0.091	-0.325	0.968	1.110	+0.269	0.088	-0.28
1833 Nov. 2	0.492	0.079	+0.284	0.908	1.073	-0.446	0.122	-0.40
1834 Dec. 11	+0.259	-0.039	+0.402	-0.310	-0.626	1.036	+0.071	-0.43
1836 Jan. 20	-0.050	+0.007	-0.100	+0.008	+0.076	1.214	-0.003	-0.37
1837 Feb. 14	0.302	0.039	0.539	-0.295	0.681	0.962	-0.026	-0.17
1838 Mar. 24	0.412	0.048	-0.425	0.739	1.030	-0.446	+0.005	-0.22
1839 Apr. 19	0.432	0.046	+0.019	0.896	1.113	+0.120	0.025	+0.02
1840 May 17	0.356	0.033	0.393	0.621	0.938	0.684	+0.009	+0.14
1841 June 10	-0.161	+0.014	+0.295	0.143	+0.488	1.123	-0.015	+0.24
1842 July 20	+0.126	-0.009	-0.248	0.031	-0.208	1.217	+0.021	-0.04
1843 Aug. 28	0.404	0.026	0.594	0.522	0.834	0.842	0.120	-0.13
1844 Sept. 25	0.544	0.029	-0.239	1.023	1.135	+0.193	0.164	-0.38
1845 Oct. 23	0.461	0.019	+0.342	0.826	1.053	-0.521	0.093	-1.41
1846 Dec. 18	+0.216	-0.007	+0.359	0.232	-0.533	1.090	0.012	-0.67
1848 Jan. 16	-0.102	+0.002	-0.205	0.003	+0.159	1.213	0.007	-0.94
1849 Feb. 19	0.325	+0.003	0.556	0.290	0.731	0.900	0.038	-0.21
1850 Mar. 22	0.425	-0.001	-0.378	0.794	1.059	-0.379	0.053	+0.10
1851 Apr. 28	-0.425	-0.006	+0.084	-0.878	+1.096	+0.208	+0.010	-0.12

Equations from the Declinations—Continued.

	x_1 .	x_2 .	x_3 .	x_4 .	x_5 .	x_6 .	x_7 .	"
1852 May 11	−0.332	−0.008	+0.410	−0.546	+0.907	+0.750	−0.033	+0.25
1853 June 13	−0.122	−0.004	+0.231	0.090	+0.404	1.163	−0.032	+0.94
1854 Aug. 9	+0.151	+0.007	−0.296	0.059	−0.328	1.165	+0.035	+0.32
1855 Sept. 7	0.429	0.024	0.581	0.602	0.900	0.751	0.108	−0.16
1856 Oct. 5	0.544	0.037	−0.162	1.039	1.144	+0.081	0.059	−1.22
1857 Nov. 8	0.441	0.035	+0.389	0.760	0.996	−0.632	+0.019	−0.57
1858 Dec. 24	+0.174	+0.016	+0.302	0.162	−0.438	1.135	−0.012	−0.22
1860 Jan. 31	−0.130	−0.013	−0.260	0.022	+0.270	1.175	+0.009	−0.94
1861 Mar. 3	0.339	0.038	0.552	0.420	0.811	0.820	+0.006	−0.30
1862 Apr. 12	0.417	0.051	−0.315	0.804	1.064	−0.269	−0.039	+0.67
1863 Apr. 30	0.419	0.056	+0.147	0.857	1.086	+0.286	0.071	+0.21
1864 May 29	0.315	0.045	0.426	0.489	0.830	0.830	−0.025	+0.85
1865 July 1	−0.097	−0.015	+0.188	0.056	+0.288	1.190	+0.008	+1.01
1866 July 29	+0.213	+0.035	−0.406	0.120	−0.402	1.157	−0.038	−0.05
1867 Sept. 8	0.464	0.082	0.569	0.702	0.954	+0.672	0.184	−0.71
1868 Oct. 10	0.542	0.102	−0.068	1.045	1.147	−0.021	0.274	−0.15
1869 Nov. 17	0.413	0.082	+0.423	0.680	0.935	0.726	0.200	−0.68
1870 Dec. 14	+0.113	+0.024	+0.204	0.089	−0.372	1.176	−0.046	−0.54
1872 Feb. 12	−0.159	−0.035	−0.315	0.052	+0.368	1.128	+0.005	−0.13
1873 Mar. 18	0.346	0.080	0.531	0.471	0.861	0.727	−0.042	+0.57
1874 Apr. 6	0.431	0.105	−0.261	0.854	1.092	−0.208	0.095	+0.32
1875 May 8	0.409	0.104	+0.206	0.823	1.060	+0.370	0.084	+1.20
1876 May 28	0.289	0.076	0.423	0.416	0.781	0.894	−0.021	+1.24
1877 June 26	−0.046	−0.013	+0.091	0.021	+0.211	1.219	+0.014	+0.34
1878 Aug. 9	+0.248	+0.071	−0.459	0.176	−0.503	1.105	−0.062	+0.01
1879 Sept. 16	0.480	0.143	−0.525	0.772	1.005	+0.577	0.193	−0.52
1880 Oct. 22	0.534	0.164	+0.024	1.030	1.134	−0.136	0.213	−0.33
1881 Nov. 26	0.380	0.121	0.442	0.593	0.864	0.812	0.111	−1.12
1882 Dec. 23	+0.070	+0.023	+0.132	0.045	−0.264	1.206	−0.022	−0.32
1884 Feb. 15	−0.196	−0.067	−0.384	0.095	+0.452	1.093	0.000	+0.02
1885 Mar. 5	0.382	0.134	0.543	0.566	0.912	0.693	+0.005	−0.13
1886 Apr. 11	0.432	0.157	−0.198	0.875	1.102	−0.126	0.031	+0.28
1887 Apr. 29	0.400	0.149	+0.263	0.786	1.057	+0.436	0.061	+0.97
1888 May 25	−0.244	−0.094	+0.383	−0.322	+0.732	+0.957	+0.058	+0.73

After the elimination of the eleven unknowns, $x_8 \dots x_{18}$, the normal equations stand as follows :

x_1	x_2		x_3		x_4		x_5		x_6		x_7	"	
94.69	-2.31	-	0.14	-	9.82	+	0.27		0.00	-	2.286	-	5.59 = 0,
- 2.31	+8.31	+	1.13	+	0.84	-	0.09	+	0.04	-	1.194	-	11.01 = 0,
- 0.14	+1.13	+	188.10	-	3.09	-	0.10	-	0.20	-	1.790	+	47.64 = 0,
- 9.82	+0.84	-	3.09	+	174.84	+	1.84	+	0.30	+	4.750	+	41.02 = 0,
+	0.27	-	0.10	+	1.84	+	46.56	+	0.15	+	0.159	+	13.48 = 0,
	0.00	-	0.20	+	0.30	+	0.15	+	45.30	+	0.173	+	16.89 = 0,
- 2.286	-1.194	-	1.790	+	4.750	+	0.159	+	0.173	+	4.184	+	3.346 = 0.

After the values of the unknowns in these equations have been obtained, the values of the rest are given by the equations

$$\begin{aligned}
 x_8 &= +0.54 - 0.04x_1 + 0.03x_3 - 0.02x_4 + 0.41x_5 + 0.10x_6 + 0.01x_7 + 0.02x_{11} \\
 x_9 &= +0.60 + 0.05x_2 - 0.06x_3 + 0.12x_4 + 0.43x_5 - 0.18x_6 + 0.03x_7 - 0.05x_{11} \\
 x_{10} &= +0.21 + 0.06x_2 - 0.05x_3 + 0.16x_4 + 0.30x_5 - 0.11x_6 + 0.30x_7 - 0.04x_{11} \\
 x_{11} &= +0.30 + 0.01x_2 - 0.02x_3 + 0.13x_4 + 0.42x_5 - 0.09x_6 - 0.12x_7 - 0.06x_{11} \\
 x_{12} &= +0.03 - 0.02x_2 + 0.00x_3 + 0.13x_4 + 0.47x_5 - 0.02x_6 - 0.03x_7 + 0.06x_{11} \\
 x_{13} &= +0.27 - 0.08x_2 + 0.02x_3 + 0.07x_4 + 0.54x_5 + 0.12x_6 + 0.07x_7 + 0.05x_{11} \\
 x_{14} &= +0.19 - 0.03x_2 + 0.00x_3 + 0.07x_4 + 0.47x_5 + 0.03x_6 + 0.25x_7 - 0.03x_{11} \\
 x_{15} &= +0.33 + 0.00x_2 + 0.00x_3 + 0.08x_4 + 0.48x_5 - 0.06x_6 + 0.00x_7 - 0.04x_{11} \\
 x_{16} &= +0.17 + 0.00x_2 + 0.00x_3 + 0.07x_4 + 0.49x_5 - 0.07x_6 + 0.00x_7 - 0.02x_{11} \\
 x_{17} &= -0.10 + 0.00x_2 + 0.00x_3 + 0.08x_4 + 0.49x_5 - 0.06x_6 - 0.01x_7 + 0.08x_{11} \\
 x_{18} &= -0.13 + 0.04x_2 + 0.02x_3 + 0.04x_4 + 0.52x_5 - 0.17x_6 - 0.11x_7 + 0.07x_{11}
 \end{aligned}$$

The values of the unknowns which result from the solution of these equations are

$x_1 = +0.065$	$x_7 = -0.172$	$x_{13} = +0.07$
$x_2 = +1.376$	$x_8 = +0.46$	$x_{14} = -0.03$
$x_3 = -0.268$	$x_9 = +0.43$	$x_{15} = +0.21$
$x_4 = -0.234$	$x_{10} = -0.04$	$x_{16} = +0.06$
$x_5 = -0.276$	$x_{11} = +0.23$	$x_{17} = -0.23$
$x_6 = -0.371$	$x_{12} = -0.11$	$x_{18} = -0.17$

The sum of the squares of the residuals by this solution is reduced from $[nn] = 101''.42$ to $[nn] = 49''.57$, and the probable error of a normal of the weight unity is $\pm 0''.293$.

The mass of Saturn which results from this investigation is, with its probable error,

$$\frac{1}{3502.20 \pm 0.53}.$$

But as the value of this mass deduced from measures of the satellites is somewhat larger we will adhere to the value given by BESSEL, and thus assume that $x_7=0$. The values of the corrections of the elements, which accord with this assumption, are

$$\begin{aligned}\delta L &= +0.''07, \\ \delta n &= +0.''014\ 02, \\ \delta e &= -0.''266, \\ e \delta \pi &= -0.''239, \\ \delta i &= -0.277, \\ \sin i \delta \Omega &= -0.372.\end{aligned}$$

By applying these corrections to the elements of the provisional theory given (*Astronomical Papers*, Vol. IV, p. 558) we obtain the following

Epoch 1850, Jan. 0.0, Greenwich M. T.

$$\begin{aligned}L &= 159^\circ\ 56'\ 25.''05 \\ \pi &= 11\ 54\ 26.\ 72 \\ \Omega &= 98\ 56\ 3.\ 54 + 35.9\ \delta e \\ i &= 1\ 18\ 41.\ 82 + 0.087\ \delta e \\ e &= 0.04825382 \\ n &= 109256.''63954 \\ m' &= \frac{1}{3501.6}\end{aligned}$$

If we denote the correction to be applied to the declinations of equatorial stars in Prof. Boss's system by

$$x + y \frac{t-1850}{100}$$

the preceding values of $x_8 \dots x_{18}$ furnish the following equations for determining x and y , to which we join their weights

"	Weight.	"	Weight.
$x - 0.92 y + 0.46 = 0$	0.25	$x - 0.18 y - 0.03 = 0$	0.7
$x - 0.78 y + 0.43 = 0$	0.06	$x - 0.06 y + 0.21 = 0$	1.0
$x - 0.67 y - 0.04 = 0$	0.04	$x + 0.06 y + 0.06 = 0$	1.0
$x - 0.54 y + 0.23 = 0$	0.12	$x + 0.18 y - 0.23 = 0$	1.0
$x - 0.42 y - 0.11 = 0$	0.2	$x + 0.32 y - 0.17 = 0$	1.0
$x - 0.30 y + 0.07 = 0$	0.2		

The discussion of the observations of Saturn adds to these the equations

"	Weight.
$x - 0.89y + 0.57 = 0$	0.10
$x - 0.65y + 1.23 = 0$	0.04
$x - 0.36y + 0.05 = 0$	0.2
$x - 0.07y - 0.08 = 0$	1.0
$x + 0.23y - 0.02 = 0$	1.0

The normal equations derived from these are

$$\begin{aligned} 7.915x - 0.167y + 0.025 &= 0 \\ -0.167x + 0.700y - 0.312 &= 0 \end{aligned}$$

The formula for the correction in question is then

$$+0''.01 + 0''.0045(t - 1850).$$

The residuals left by the foregoing solution in the case of each normal, together with the number of observations the latter is founded upon, and the weight it has received in the discussion, are given below:

Date.	Obs. — Cal.		No. of obs.		Weight.	
	$\Delta \alpha \cos \delta.$	$\Delta \delta.$	$\alpha.$	$\delta.$	$\alpha.$	$\delta.$
	"					
1750 Nov. 19	+0.83	—1.48	4	4	0.05	0.05
1751 Aug. 17	+3.78	+1.53	9	9	0.1	0.1
Nov. 20	+2.37	+3.66	7	7	0.1	0.1
1752 Feb. 7	+1.46	—1.29	5	4	0.05	0.05
Sept. 22	+2.43	+2.62	13	13	0.15	0.15
1753 Jan. 2	+0.64	+1.07	3	3	0.05	0.05
Mar. 29	+0.02	—1.02	4	3	0.05	0.05
Oct. 19	+1.70	—1.22	8	8	0.1	0.1
1754 Jan. 31	—1.71	—0.30	2	2	0.025	0.025
Dec. 5	+3.76	—0.66	2	2	0.025	0.025
1755 Apr. 17	+1.56	—0.63	6	5	0.1	0.1
Dec. 17	+1.19	—0.28	4	4	0.05	0.05
1756 Apr. 20	+3.65	—1.26	5	5	0.05	0.05
1757 Jan. 2	+2.27	—1.97	3	2	0.05	0.025
May 13	+2.56	—0.84	14	13	0.15	0.15
June 15	+0.43	—1.38	9	9	0.1	0.1

Date.	Obs. — Cal.		No. of obs.		Weight.	
	$\Delta \alpha \cos \delta.$	$\Delta \delta.$	$\alpha.$	$\delta.$	$\alpha.$	$\delta.$
	"					
1758 Mar. 27	+3.88	+1.70	3	3	0.05	0.05
June 14	+2.86	+0.13	12	12	0.15	0.15
July 28	+0.92	—0.26	7	6	0.1	0.1
1759 July 14	+1.24	+0.33	11	10	0.15	0.15
Sept. 20	—0.65	+0.49	11	11	0.15	0.15
1760 Aug. 16	—1.65	+0.16	3	3	0.05	0.05
Nov. 25	—2.45	—0.73	3	1	0.05	0.025
1761 July 13	—0.52	—0.70	9	6	0.1	0.1
Sept. 12	—0.40	—0.62	17	13	0.15	0.15
Dec. 6	—0.86	—1.02	19	18	0.15	0.15
1762 Oct. 30	—0.13	—0.43	10	10	0.1	0.1
1763 Dec. 2	+0.54	+0.78	12	11	0.15	0.15
1765 Feb. 1	—1.40	+0.28	6	5	0.1	0.1
1766 Feb. 3	—0.23	—1.10	7	7	0.1	0.1
1767 Mar. 8	+0.94	+1.32	3	3	0.05	0.05
1768 Apr. 6	+1.67	+0.57	4	4	0.05	0.05
1769 May 9	—0.22	+1.98	5	4	0.1	0.05
1770 June 10	+0.21	+1.89	5	5	0.1	0.1
1771 July 14	+0.47	+2.40	4	4	0.05	0.05
1772 Aug. 28	+1.41	+0.50	4	3	0.05	0.05
1773 Sept. 28	+0.06	+1.21	4	4	0.1	0.05
1774 Nov. 3	+0.95	—4.98	4	4	0.05	0.05
1775 Dec. 9	+0.20	—3.60	3	2	0.05	0.025
1777 Jan. 9	+0.56	—0.82	5	5	0.1	0.1
1778 Feb. 7	+0.71	+0.59	4	4	0.1	0.05
1779 Mar. 12	+3.49	+1.17	2	2	0.025	0.025
1780 Apr. 17	+1.40	+0.09	2	2	0.025	0.025
1782 June 16	—0.45	+0.29	4	4	0.05	0.05
1783 July 17	—0.23	+0.53	3	3	0.05	0.05
1784 Aug. 24	+1.02	+7.04	3	3	0.05	0.00
1785 Oct. 1	—1.54	+1.60	2	2	0.025	0.025
1786 Nov. 7	+2.24	+0.29	2	2	0.025	0.025

TABLES OF

Date.	Obs. — Cal.		No. of obs.		Weight.	
	$\Delta \alpha \cos \delta.$	$\Delta \delta.$	$\alpha.$	$\delta.$	$\alpha.$	$\delta.$
	"					
1787 Dec. 12	—1.67	—1.08	3	3	0.05	0.05
1789 Jan. 14	+0.51	—2.17	6	5	0.1	0.1
1790 Feb. 15	—0.61	+1.92	9	9	0.15	0.15
1791 Mar. 15	+0.04	+1.29	6	6	0.1	0.1
1792 Apr. 28	+0.33	+0.49	24	24	0.25	0.2
1793 May 22	—1.81	—1.80	7	7	0.1	0.1
1794 June 18	—1.53	—0.57	12	12	0.15	0.15
1795 July 26	+0.01	—0.08	11	11	0.15	0.15
1796 Sept. 7	—0.16	+0.38	22	22	0.25	0.2
1797 Oct. 6	—1.88	—0.58	5	5	0.1	0.1
1798 Nov. 12	—1.22	+0.20	7	7	0.1	0.1
1799 Dec. 19	+0.98	—1.40	3	3	0.025	0.05
1801 Jan. 31	+0.20	—1.64	12	11	0.15	0.15
1802 Feb. 28	—1.24	+0.84	15	15	0.15	0.15
1803 Mar. 28	—1.53	+0.24	22	19	0.25	0.2
1804 Apr. 26	—0.15	—2.84	12	12	0.15	0.15
1805 May 25	+0.62	—0.04	19	19	0.2	0.2
1806 June 23	+0.38	—0.12	22	22	0.2	0.2
1807 Aug. 1	—1.88	—0.32	26	25	0.25	0.25
1808 Sept. 14	—0.92	—1.40	25	24	0.25	0.25
1809 Oct. 17	—0.68	—0.40	22	22	0.2	0.2
1810 Nov. 23	—2.05	—1.63	8	8	0.15	0.15
1811 Dec. 25	—0.63	+0.22	12	12	0.2	0.2
1813 Feb. 20	—0.80	+1.48	25	25	0.25	0.25
1814 Feb. 23	+1.28	+1.06	17	16	0.2	0.2
1815 Mar. 30	+0.18	+1.64	18	18	0.2	0.2
1816 Apr. 24	+0.32	+0.61	22	11	0.2	0.15
1817 May 30	—3.11	—1.32	17	9	0.2	0.15
1818 June 1	+0.96	—0.95	15	8	0.15	0.15
1819 Aug. 27	—1.04	+0.13	31	31	0.25	0.25
1820 Sept. 26	—1.58	—0.35	44	43	0.3	0.3
1821 Nov. 5	—0.89	—0.69	37	40	0.3	0.3

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Date.	Obs. — Cal.		No. of obs.		Weight.	
	$\Delta \alpha \cos \delta.$	$\Delta \delta.$	$\alpha.$	$\delta.$	$\alpha.$	$\delta.$
	"	"				
1822 Dec. 9	—2.53	—0.61	39	38	0.3	0.3
1824 Jan. 14	—0.70	+0.40	22	22	0.2	0.2
1825 Feb. 3	—0.89	—0.08	14	14	0.15	0.15
1826 Mar. 16	—0.27	+0.05	36	36	0.6	0.6
1827 Apr. 4	+0.11	+0.81	17	19	0.4	0.4
1828 May 17	+0.47	—0.29	49	31	0.6	0.6
1829 June 10	+0.19	+0.46	38	9	0.6	0.3
1830 July 24	+0.03	+0.01	47	23	0.7	0.6
1831 Aug. 26	+0.81	—0.41	52	30	0.7	0.6
1832 Oct. 3	+0.32	—0.20	55	23	0.7	0.5
1833 Nov. 2	+0.68	—0.16	60	60	0.7	1.0
1834 Dec. 11	+0.26	—0.11	87	105	1	1
1836 Jan. 20	+0.35	—0.15	53	35	1	1
1837 Feb. 14	—0.24	—0.29	81	84	1	1
1838 Mar. 24	+0.29	—0.03	114	103	1	1
1839 Apr. 19	+0.19	+0.06	116	103	1	1
1840 May 17	—0.44	+0.26	134	113	1	1
1841 June 10	—0.14	+0.33	79	70	1	1
1842 July 20	+0.30	+0.32	139	138	1	1
1843 Aug. 28	—0.16	—0.06	135	127	1	1
1844 Sept. 25	+0.55	—0.15	87	74	1	1
1845 Oct. 23	+0.03	+0.84	115	88	1	1
1846 Dec. 18	—0.26	+0.16	53	53	1	1
1848 Jan. 16	—0.58	+0.49	38	37	1	1
1849 Feb. 19	—0.73	—0.11	47	50	1	1
1850 Mar. 22	—0.05	—0.18	69	52	1	1
1851 Apr. 28	—0.90	+0.36	40	38	1	1
1852 May 11	—0.55	+0.30	47	54	1	1
1853 June 13	—1.03	—0.33	51	51	1	1
1854 Aug. 9	—0.70	—0.05	66	65	1	1
1855 Sept. 7	—0.53	—0.12	102	75	1	1
1856 Oct. 5	+0.31	+0.62	77	84	1	1

TABLES OF

Date.	Obs. — Cal.		No. of obs.		Weight.	
	$\Delta \alpha \cos \delta.$	$\Delta \delta.$	$\alpha.$	$\delta.$	$\alpha.$	$\delta.$
	"					
1857 Nov. 8	+0.61	—0.06	59	58	1	1
1858 Dec. 24	+0.10	—0.26	58	50	1	1
1860 Jan. 31	+0.34	+0.58	83	70	1	1
1861 Mar. 3	—0.32	+0.10	62	58	1	1
1862 Apr. 12	+0.64	—0.61	91	87	1	1
1863 Apr. 30	+0.57	+0.21	131	143	1	1
1864 May 29	+0.37	—0.15	92	87	1	1
1865 July 1	—0.13	—0.34	77	63	1	1
1866 July 29	+0.46	+0.24	72	74	1	1
1867 Sept. 8	+0.72	+0.31	92	93	1	1
1868 Oct. 10	—0.31	—0.58	100	98	1	1
1869 Nov. 17	—0.19	+0.03	50	47	1	1
1870 Dec. 14	+0.08	+0.08	19	25	1	1
1872 Feb. 12	+0.18	—0.12	59	52	1	1
1873 Mar. 18	+0.22	—0.62	37	36	1	1
1874 Apr. 6	+0.28	—0.10	68	70	1	1
1875 May 8	+0.65	—0.62	85	88	1	1
1876 May 28	+0.18	—0.43	96	98	1	1
1877 June 26	+0.34	+0.34	63	62	1	1
1878 Aug. 9	+0.60	+0.11	58	59	1	1
1879 Sept. 16	+0.03	+0.02	71	74	1	1
1880 Oct. 22	—0.20	—0.41	74	75	1	1
1881 Nov. 26	+0.30	+0.50	77	76	1	1
1882 Dec. 23	+0.52	—0.05	35	36	0.8	0.8
1884 Feb. 15	+0.01	—0.16	49	31	0.8	0.8
1885 Mar. 5	—0.97	+0.22	35	34	0.8	0.8
1886 Apr. 11	—0.48	+0.15	28	31	0.5	0.5
1887 Apr. 29	—0.29	—0.21	25	26	0.5	0.5
1888 May 25	—0.36	+0.20	28	28	0.5	0.5

CONSTRUCTION OF THE TABLES.

These tables of Jupiter are founded on the following elements for the planet found from those given on page 17, by putting $\delta \varepsilon = -0''.15$:

Epoch 1850, Jan. 0. 0, Greenwich mean time.

$$L = 159^\circ 56' 25''.05$$

$$\pi = 11 \quad 54 \quad 26 \quad .72$$

$$\Omega = 98 \quad 55 \quad 58 \quad .16$$

$$i = 1 \quad 18 \quad 41 \quad .81$$

$$e = 0.04825382$$

$$n = 109256''.63954$$

$$\log a = 0.7162373716$$

The values assumed for the principal disturbing masses are:

$$\text{Saturn} = \frac{1}{3501.6}, \quad \text{Uranus} = \frac{1}{22869}, \quad \text{Neptune} = \frac{1}{19700}.$$

The values of the constituents of the arguments occurring in the formulæ are:

$$g = 148 \quad 1 \quad 58.33 + 109256''.63954t$$

$$g' = 284 \quad 43 \quad 0.42 + 43996.20414t$$

$$g'' = 220 \quad 10 \quad 10.35 + 15425.752t$$

$$g''' = 291 \quad 48 \quad 8.61 + 7864.935t$$

$$\varphi - \mathcal{U} = 84 \quad 1 \quad + 1997385t$$

$$\oplus - \mathcal{U} = 299 \quad 52 \quad + 1186721t$$

Here g, g', g'', g''' denote severally the mean anomalies of Jupiter, Saturn, Uranus, and Neptune, and φ, \oplus , and \mathcal{U} the mean longitudes of Venus, the Earth, and Jupiter.

It will be gathered from the value of n , just given, that the mean motion of Jupiter in one day is $299''.12837656$, and that the period is 4332.58795067 days. It is preferable to express the fundamental argument z in time rather than to use nz in arc; and to use as the unit of time the revolution of Jupiter in the parts of the coefficients which are factored by the time or its various powers. Time thus counted from 1850.0 we will denote by m . Thus, it is evident that to obtain δz in this form, the coefficients of $n\delta z$ ought to be multiplied by a factor whose logarithm is 7.5241424 if they do not involve T , but by a factor whose logarithm is 6.5982996 if they multiply T , and by a factor whose logarithm is 5.6724568 if they multiply T^2 , and by a factor whose logarithm is 4.7466140 if they multiply T^3 .

The heliocentric longitude of Jupiter referred to the mean equinox and ecliptic of date is

$$= f + R + 50''.264708t,$$

where f and R denote severally the true anomaly and reduction to the ecliptic computed as though the elements of the orbit given above were absolutely constant, but in which the actual time receives an augmentation δz having the following expression. The coefficients independent of m have six places of decimals of a mean solar day; those multiplying m , m^2 , and m^3 severally seven, eight, and ten. (See *Astronomical Papers*, Vol. iv, p. 560.)

Value of δz .

$$\begin{aligned}
 &+8m+3919m^2+904m^3 \\
 &+399278m \sin (-g+227^\circ 27' 45''.7) \\
 &+3267m^2 \sin (-g+298^\circ 22') + 20m^3 \sin (-g+46^\circ) \\
 &+0.000789 \sin (-2g+35^\circ.1) + 3156m \sin (-2g+224^\circ 50'.8) + 1m^3 \sin (-2g+274^\circ) \\
 &\quad + 126m^2 \sin (-2g+284.8) \\
 &+0.000157 \sin (-3g+137) + 44m \sin (-3g+224) + 3m^2 \sin (-3g+276) \\
 &+0.000007 \sin (-4g+103) \\
 &+0.000017 \sin (g'+3g+147) \\
 &+0.000427 \sin (g'+2g+123.3) + 23m \sin (g'+2g+21^\circ.3) \\
 &+0.004135 \sin (g'+g+215 13'.8) + 132m \sin (g'+g+116 11') \\
 &+0.037294 \sin (g'+150 56 5'') + 696m \sin (g'+49 46) \\
 &\quad + 3m^2 \sin (g'+323) \\
 &+0.266919 \sin (g'-g+79 12 10) + 18m \sin (g'-g+245.0) \\
 &+0.005041 \sin (g'-2g+90 37.8) + 94m \sin (g'-2g+131.1) \\
 &+0.000361 \sin (g'-3g+108.4) + 10m \sin (g'-3g+200) \\
 &+0.000060 \sin (g'-4g+212) \\
 &+0.000043 \sin (2g'+2g+206) + 3m \sin (2g'+2g+123) \\
 &+0.001628 \sin (2g'+g+184.3) + 84m \sin (2g'+g+86.6) \\
 &+0.022776 \sin (2g'+123 49.3) + 695m \sin (2g'+13 51) \\
 &\quad + 2m^2 \sin (2g'+230) \\
 &+0.411235 \sin (2g'-g+1 24 46.9) + 5025m \sin (2g'-g+301 24.3) \\
 &\quad + 33m^2 \sin (2g'-g+217) \\
 &+0.650670 \sin (2g'-2g+336 53 48.5) + 88m \sin (2g'-2g+354 34) \\
 &\quad + 1m^2 \sin (2g'-2g+39) \\
 &+0.009397 \sin (2g'-3g+331 31.8) + 258m \sin (2g'-3g+22 42) \\
 &+0.000181 \sin (2g'-4g+305.8) + 10m \sin (2g'-4g+10) \\
 &+0.000007 \sin (2g'-5g+300)
 \end{aligned}$$

$$\begin{aligned}
& \text{d.} \\
& +0.000207 \sin (3g' + g + 275^\circ.9) + 12m \sin (3g' + g + 185^\circ) \\
& +0.012319 \sin (3g' + 270^\circ 58.6) + 562m \sin (3g' + 174^\circ 15') \\
& +0.046930 \sin (3g' - g + 312^\circ 11' 29'') + 919m \sin (3g' - g + 210^\circ 12.5) \\
& \quad + 8m^2 \sin (3g' - g + 161^\circ) \\
& +0.276299 \sin (3g' - 2g + 127^\circ 22' 55'') + 4560m \sin (3g' - 2g + 30^\circ 1.0) \\
& \quad + 27m^2 \sin (3g' - 2g + 300^\circ) \\
& +0.054251 \sin (3g' - 3g + 57^\circ 42' 53'') + 58m \sin (3g' - 3g + 150^\circ 34') \\
& +0.001355 \sin (3g' - 4g + 38^\circ 13') + 31m \sin (3g' - 4g + 100.4^\circ) \\
& +0.000047 \sin (3g' - 5g + 328^\circ) + 2m \sin (3g' - 5g + 50^\circ) \\
\\
& +0.000050 \sin (4g' + 177^\circ) \\
& +0.002287 \sin (4g' - g + 191^\circ 30') + 120m \sin (4g' - g + 84^\circ 0') \\
& +0.056290 \sin (4g' - 2g + 98^\circ 28' 4'') + 1827m \sin (4g' - 2g + 0^\circ 32.9') \\
& \quad + 15m^2 \sin (4g' - 2g + 261^\circ) \\
& +0.050072 \sin (4g' - 3g + 26^\circ 2' 42'') + 811m \sin (4g' - 3g + 288^\circ 17') \\
& \quad + 6m^2 \sin (4g' - 3g + 198^\circ) \\
& +0.012072 \sin (4g' - 4g + 129^\circ 27.7') + 15m \sin (4g' - 4g + 37^\circ) \\
& +0.000508 \sin (4g' - 5g + 104^\circ 21') + 9m \sin (4g' - 5g + 169^\circ) \\
& +0.000030 \sin (4g' - 6g + 33^\circ) \\
\\
& +0.000013 \sin (5g' + 45^\circ) + 19m \sin (5g' + 18^\circ) \\
& +0.002595 \sin (5g' - g + 1^\circ 46.5') + 1018m \sin (5g' - g + 11^\circ 47') \\
& \quad + 62m^2 \sin (5g' - g + 284.9^\circ) \\
& +[3.998745 - .0022133m] \sin (5g' - 2g - 81'' .97009t + 67^\circ 8' 55'' .73) \\
& \quad + 732m^2 \sin (5g' - 2g + 48^\circ 49.7') \\
& +0.538023 \sin (5g' - 3g + 176^\circ 27' 51.0'') + 18879m \sin (5g' - 3g + 80^\circ 53.7') \\
& \quad + 277m^2 \sin (5g' - 3g + 349^\circ 26') \\
& +0.012256 \sin (5g' - 4g + 133^\circ 33.6') + 349m \sin (5g' - 4g + 72.1^\circ) \\
& \quad + 4m^2 \sin (5g' - 4g + 118^\circ) \\
& +0.003748 \sin (5g' - 5g + 206^\circ 52.6') + 6m \sin (5g' - 5g + 134^\circ) \\
& +0.000227 \sin (5g' - 6g + 178^\circ 43') + 3m \sin (5g' - 6g + 245^\circ) \\
& +0.000013 \sin (5g' - 7g + 120^\circ)
\end{aligned}$$

$$\begin{aligned}
& +0.000013 \sin (6g' - g + 320^\circ) \\
& +0.000501 \sin (6g' - 2g + 29^\circ 31') + 35m \sin (6g' - 2g + 290^\circ .4) \\
& +0.003948 \sin (6g' - 3g + 150^\circ 52'.8) + 375m \sin (6g' - 3g + 289^\circ .5) \\
& \quad + 1m^2 \sin (6g' - 3g + 315^\circ) \\
& +0.005088 \sin (6g' - 4g + 74^\circ 36'.0) + 158m \sin (6g' - 4g + 336^\circ .5) \\
& +0.002684 \sin (6g' - 5g + 179^\circ 13') + 45m \sin (6g' - 5g + 82^\circ .9) \\
& +0.001247 \sin (6g' - 6g + 285^\circ 43') + 1m \sin (6g' - 6g + 158^\circ) \\
& +0.000107 \sin (6g' - 7g + 254^\circ .5) + 2m \sin (6g' - 7g + 310^\circ) \\
\\
& +0.000027 \sin (7g' - 2g + 213^\circ) + 6m \sin (7g' - 2g + 88^\circ) \\
& +0.006405 \sin (7g' - 3g + 214^\circ 9'.8) + 308m \sin (7g' - 3g + 116^\circ .2) \\
& \quad + 1m^2 \sin (7g' - 3g + 0^\circ) \\
& +0.009685 \sin (7g' - 4g + 223^\circ 47'.7) + 441m \sin (7g' - 4g + 125^\circ .4) \\
& \quad + 2m^2 \sin (7g' - 4g + 212^\circ) \\
& +0.000983 \sin (7g' - 5g + 161^\circ 34') + 37m \sin (7g' - 5g + 64^\circ .6) \\
& +0.001020 \sin (7g' - 6g + 258^\circ 47') + 16m \sin (7g' - 6g + 159^\circ .6) \\
& +0.000461 \sin (7g' - 7g + 2^\circ 15') \\
& +0.000050 \sin (7g' - 8g + 329^\circ .8) + 1m \sin (7g' - 8g + 342^\circ) \\
& +0.000003 \sin (7g' - 9g + 301^\circ) \\
\\
& +0.000033 \sin (8g' - 2g + 340^\circ 29') \\
& +0.000929 \sin (8g' - 3g + 198^\circ 1') + 52m \sin (8g' - 3g + 104^\circ .2) \\
& +0.006225 \sin (8g' - 4g + 13^\circ 32'.7) + 348m \sin (8g' - 4g + 277^\circ .3) \\
& +0.001066 \sin (8g' - 5g + 304^\circ 25') + 52m \sin (8g' - 5g + 207^\circ .9) \\
& +0.000458 \sin (8g' - 6g + 234^\circ 50') + 18m \sin (8g' - 6g + 139^\circ) \\
& +0.000414 \sin (8g' - 7g + 336^\circ 33') + 6m \sin (8g' - 7g + 239^\circ) \\
& +0.000181 \sin (8g' - 8g + 77^\circ 42') \\
& +0.000027 \sin (8g' - 9g + 47^\circ) \\
& +0.000003 \sin (8g' - 10g + 16^\circ) \\
\\
& +0.000030 \sin (9g' - 3g + 170^\circ) \\
& +0.001765 \sin (9g' - 4g + 344^\circ 38') + 111m \sin (9g' - 4g + 247^\circ .9) \\
& +0.001685 \sin (9g' - 5g + 272^\circ 23') + 100m \sin (9g' - 5g + 175^\circ .3) \\
& +0.000358 \sin (9g' - 6g + 14^\circ 51') + 14m \sin (9g' - 6g + 280^\circ .6) \\
& +0.000211 \sin (9g' - 7g + 312^\circ 30') + 7m \sin (9g' - 7g + 219^\circ) \\
& +0.000181 \sin (9g' - 8g + 53^\circ 34') + 3m \sin (9g' - 8g + 318^\circ) \\
& +0.000074 \sin (9g' - 9g + 154^\circ 15') \\
& +0.000013 \sin (9g' - 10g + 124^\circ)
\end{aligned}$$

$$\begin{aligned}
& + [0.036853 - .0000347m] \sin (10g' - 4g - 145.''72t + 313^\circ 41'.0) \\
& \quad + 63m^2 \sin (10g' - 4g + 311^\circ .4) \\
& + 0.011961 \sin (10g' - 5g + 63^\circ 18'.2) + 823m \sin (10g' - 5g + 325^\circ 50') \\
& + 0.000324 \sin (10g' - 6g + 16^\circ 23) + 17m \sin (10g' - 6g + 289.9) \\
& + 0.000114 \sin (10g' - 7g + 93^\circ 32) + 4m \sin (10g' - 7g + 352) \\
& + 0.000100 \sin (10g' - 8g + 28^\circ 18) + 3m \sin (10g' - 8g + 285) \\
& + 0.000084 \sin (10g' - 9g + 129^\circ 29) \\
& + 0.000030 \sin (10g' - 10g + 230) \\
& + 0.000007 \sin (10g' - 11g + 201) \\
\\
& + 0.000017 \sin (11g' - 4g + 286) \\
& + 0.000324 \sin (11g' - 5g + 34^\circ 14) + 12m \sin (11g' - 5g + 294.8) \\
& + 0.000264 \sin (11g' - 6g + 321^\circ 52) + 12m \sin (11g' - 6g + 225.2) \\
& + 0.000134 \sin (11g' - 7g + 66^\circ 2) + 4m \sin (11g' - 7g + 328) \\
& + 0.000040 \sin (11g' - 8g + 168^\circ 13) \\
& + 0.000050 \sin (11g' - 9g + 104^\circ 11) + 1m \sin (11g' - 9g + 0) \\
& + 0.000040 \sin (11g' - 10g + 208^\circ 35) \\
& + 0.000013 \sin (11g' - 11g + 304) \\
& + 0.000003 \sin (11g' - 12g + 276) \\
\\
& + 0.000217 \sin (12g' - 5g + 35^\circ 13) + 11m \sin (12g' - 5g + 266.8) \\
& + 0.000184 \sin (12g' - 6g + 293^\circ 31) + 12m \sin (12g' - 6g + 190.2) \\
& + 0.000077 \sin (12g' - 7g + 38^\circ 45) + 2m \sin (12g' - 7g + 293) \\
& + 0.000057 \sin (12g' - 8g + 144^\circ 9) + 2m \sin (12g' - 8g + 40) \\
& + 0.000013 \sin (12g' - 9g + 223) + 1m \sin (12g' - 9g + 198) \\
& + 0.000023 \sin (12g' - 10g + 184) \\
& + 0.000017 \sin (12g' - 11g + 284) \\
& + 0.000007 \sin (12g' - 12g + 12) \\
\\
& + 0.000033 \sin (g'' + g + 183) + 0.001562 \sin (6g' - 3g - 3g'' + 105^\circ 59') \\
& \quad + 29m \sin (6g' - 3g - 3g'' + 337^\circ .4) \\
& + 0.000904 \sin (g'' + 174^\circ 41) + 0.028956 \sin (6g' - 2g - 3g'' + 187^\circ 50.0) \\
& \quad + 1125m \sin (6g' - 2g - 3g'' + 64^\circ 10) \\
\\
& + 0.003011 \sin (g'' - g + 156^\circ 57) \\
& + 0.000020 \sin (g'' - 2g + 188) + 0.000037 \sin (g''' + 99^\circ 21')
\end{aligned}$$

$$\begin{aligned}
& +0.000033 \sin (2g'' + 190^\circ) + 0.000956 \sin (g''' - g + 31^\circ 37') \\
& + 0.001718 \sin (2g'' - g + 136^\circ 42') + 0.000013 \sin (g''' - 2g + 35^\circ) \\
& + 0.001536 \sin (2g'' - 2g + 132^\circ 49') + 0.000007 \sin (2g''' + 61^\circ) \\
& + 0.000040 \sin (2g'' - 3g + 130^\circ 44') + 0.000595 \sin (2g''' - g + 243^\circ 29') \\
& + 0.000003 \sin (3g'' + 235^\circ) + 0.000338 \sin (2g''' - 2g + 242^\circ 47') \\
& + 0.000301 \sin (3g'' - g + 132^\circ 12') + 0.000007 \sin (2g''' - 3g + 242^\circ) \\
& + 0.000480 \sin (3g'' - 2g + 126^\circ 54') + 0.000007 \sin (3g''' - g + 209^\circ) \\
& + 0.000113 \sin (3g'' - 3g + 287^\circ 32') + 0.000007 \sin (3g''' - 2g + 151^\circ) \\
& + 0.000007 \sin (3g'' - 4g + 283^\circ) + 0.000020 \sin (3g''' - 3g + 273^\circ) \\
& + 0.000050 \sin (4g'' - g + 128^\circ 38') \\
& + 0.000113 \sin (4g'' - 2g + 121^\circ 9') + 0.000234 \sin (\varphi - 24^\circ) \\
& + 0.000043 \sin (4g'' - 3g + 282^\circ 16') + 0.000404 \sin (\oplus - 24^\circ) \\
& + 0.000013 \sin (4g'' - 4g + 83^\circ) \\
& + 0.000010 \sin (5g'' - g + 127^\circ) \\
& + 0.000027 \sin (5g'' - 2g + 115^\circ) \\
& + 0.000010 \sin (5g'' - 3g + 277^\circ) \\
& + 0.000007 \sin (5g'' - 4g + 78^\circ) \\
& + 0.000003 \sin (5g'' - 5g + 237^\circ) \\
& + 0.000003 \sin (6g'' - g + 117^\circ) \\
& + 0.000007 \sin (6g'' - 2g + 109^\circ) \\
& + 0.000003 \sin (6g'' - 3g + 270^\circ) \\
& + 0.000003 \sin (6g'' - 4g + 72^\circ) \\
& + 0.000050 \sin (7g' - g + 116.1^\circ) \\
& + 0.000013 \sin (7g' - 2g + 103^\circ)
\end{aligned}$$

The following expression for the common logarithm of $\frac{r}{r}$ is obtained by multiplying the coefficients factored by T , T^2 , and T^3 severally by numbers whose logarithms are 9.0741572, 8.1483144, and 7.2224716.

Value of the common logarithm of $\frac{r}{r}$ in units of the seventh decimal.

$$\begin{aligned}
& -40.83 \quad -2.053m - 0.00034m^2 \\
& + 18.17 \cos (-g + 323^\circ 32') + 125.634m \cos (-g + 227^\circ 27' 3'') \\
& \quad + 0.10268m^2 \cos (-g + 297^\circ 58'.9) \\
& \quad + 0.000006m^3 \cos (-g + 45^\circ) \\
& + 3.89 \cos (-2g + 31^\circ 43') + 3.025m \cos (-2g + 227^\circ 13.7') \\
& \quad + 0.00515m^2 \cos (-2g + 285.8) \\
& + 0.80 \cos (-3g + 133^\circ 10') + 0.137m \cos (-3g + 229.4^\circ) \\
& \quad + 0.00122m^2 \cos (-3g + 272.4) \\
& + 0.07 \cos (-4g + 111^\circ) + 0.008m \cos (-4g + 229^\circ)
\end{aligned}$$

$$\begin{aligned}
& + 0.13 \cos (g' + 3g + 323^\circ 49') \\
& + 2.08 \cos (g' + 2g + 308 \quad 0) + 0.010m \cos (g' + 2g + 209^\circ) \\
& + 16.58 \cos (g' + g + 33 \quad 51) + 0.054m \cos (g' + g + 294 \quad 30') \\
& + 46.87 \cos (g' \quad + 341 \quad 13.9) + 0.102m \cos (g' \quad + 229 \quad 1) \\
& \quad + 0.00004m^2 \cos (g' + 149) \\
& + 545.14 \cos (g' - g + 79 \quad 11 \quad 26'') + 0.006m \cos (g' - g + 237 \quad) \\
& + 23.70 \cos (g' - 2g + 87 \quad 59.0) + 0.034m \cos (g' - 2g + 130 \quad 59) \\
& + 2.09 \cos (g' - 3g + 107 \quad 4) + 0.006m \cos (g' - 3g + 197 \quad) \\
& + 0.33 \cos (g' - 4g + 206 \quad 40) \\
\\
& + 0.31 \cos (2g' + 2g + 18 \quad 52) + 0.001m \cos (2g' + 2g + 299 \quad) \\
& + 7.42 \cos (2g' + g + 1 \quad 54) + 0.035m \cos (2g' + g + 265 \quad) \\
& + 61.05 \cos (2g' \quad + 305 \quad 11.3) + 0.190m \cos (2g' \quad + 193 \quad 19) \\
& \quad + 0.00001m^2 \cos (2g' \quad + 297^\circ) \\
& + 383.02 \cos (2g' - g + 356 \quad 11 \quad 18) + 0.346m \cos (2g' - g + 300 \quad 59) \\
& \quad + 0.00030m^2 \cos (2g' - g + 217) \\
& + 2303.37 \cos (2g' - 2g + 336 \quad 54 \quad 2.4) + 0.029m \cos (2g' - 2g + 352 \quad 6) \\
& \quad + 0.00003m^2 \cos (2g' - 2g + 135) \\
& + 62.33 \cos (2g' - 3g + 333 \quad 10.7) + 0.104m \cos (2g' - 3g + 22 \quad 59) \\
& + 1.94 \cos (2g' - 4g + 319 \quad 56) + 0.005m \cos (2g' - 4g + 3 \quad) \\
& + 0.10 \cos (2g' - 5g + 329 \quad) \\
\\
& + 1.39 \cos (3g' + g + 94 \quad 40) + 0.007m \cos (3g' + g + 356 \quad) \\
& + 43.89 \cos (3g' \quad + 90 \quad 51) + 0.201m \cos (3g' \quad + 353 \quad 42) \\
& + 56.45 \cos (3g' - g + 133 \quad 2.4) + 0.102m \cos (3g' - g + 29 \quad 1) \\
& \quad + 0.00001m^2 \cos (3g' - g + 333) \\
& + 738.42 \cos (3g' - 2g + 126 \quad 35 \quad 36) + 1.212m \cos (3g' - 2g + 30 \quad 3.7) \\
& \quad + 0.00072m^2 \cos (3g' - 2g + 298 \quad 58) \\
& + 241.37 \cos (3g' - 3g + 58 \quad 30 \quad 55) + 0.018m \cos (3g' - 3g + 121 \quad 7) \\
& + 9.52 \cos (3g' - 4g + 44 \quad 11) + 0.014m \cos (3g' - 4g + 98.6 \quad) \\
& + 0.34 \cos (3g' - 5g + 356 \quad 55) + 0.001m \cos (3g' - 5g + 45 \quad)
\end{aligned}$$

+	0.23	cos	(4 <i>g</i> '	+355°	51'	)	+0.001 <i>m</i>	cos	(4 <i>g</i> '	+248°)		
+	4.61	cos	(4 <i>g</i> '	- <i>g</i> + 24	58	)	+0.010 <i>m</i>	cos	(4 <i>g</i> '	- <i>g</i> + 91	34')	
+	85.28	cos	(4 <i>g</i> '	- 2 <i>g</i> + 94	3.3	)	+0.271 <i>m</i>	cos	(4 <i>g</i> '	- 2 <i>g</i> + 358	31)	
										+0.00013 <i>m</i> ²	cos	(4 <i>g</i> '	- 2 <i>g</i> + 270°)	
+	193.21	cos	(4 <i>g</i> '	- 3 <i>g</i> + 27	0.7	)	+0.315 <i>m</i>	cos	(4 <i>g</i> '	- 3 <i>g</i> + 288	26)	
										+0.00017 <i>m</i> ²	cos	(4 <i>g</i> '	- 3 <i>g</i> + 197)
+	59.81	cos	(4 <i>g</i> '	- 4 <i>g</i> + 127	51.1	)	+0.006 <i>m</i>	cos	(4 <i>g</i> '	- 4 <i>g</i> + 359)		
+	3.50	cos	(4 <i>g</i> '	- 5 <i>g</i> + 109	14	)	+0.005 <i>m</i>	cos	(4 <i>g</i> '	- 5 <i>g</i> + 169)		
+	0.20	cos	(4 <i>g</i> '	- 6 <i>g</i> + 52	55)								
+	0.12	cos	(5 <i>g</i> '	+215		)	+0.018 <i>m</i>	cos	(5 <i>g</i> '	+198)		
+	8.14	cos	(5 <i>g</i> '	- <i>g</i> + 180	47	)	+0.319 <i>m</i>	cos	(5 <i>g</i> '	- <i>g</i> + 192	9)	
										+0.00004 <i>m</i> ²	cos	(5 <i>g</i> '	- <i>g</i> + 158)
+	229.34	cos	(5 <i>g</i> '	- 2 <i>g</i> + 237	53.6	)	+1.074 <i>m</i>	cos	(5 <i>g</i> '	- 2 <i>g</i> + 143	57.1)	
										+0.00228 <i>m</i> ²	cos	(5 <i>g</i> '	- 2 <i>g</i> + 46° 23')	
+	1679.20	cos	(5 <i>g</i> '	- 3 <i>g</i> + 176	23 50'')	)	+5.896 <i>m</i>	cos	(5 <i>g</i> '	- 3 <i>g</i> + 80	52.6)	
										+0.00739 <i>m</i> ²	cos	(5 <i>g</i> '	- 3 <i>g</i> + 343	42)
+	65.06	cos	(5 <i>g</i> '	- 4 <i>g</i> + 141	13.5	)	+0.110 <i>m</i>	cos	(5 <i>g</i> '	- 4 <i>g</i> + 73	6)	
										+0.00015 <i>m</i> ²	cos	(5 <i>g</i> '	- 4 <i>g</i> + 326)
+	20.58	cos	(5 <i>g</i> '	- 5 <i>g</i> + 204	48	)	+0.005 <i>m</i>	cos	(5 <i>g</i> '	- 5 <i>g</i> + 244)		
+	1.56	cos	(5 <i>g</i> '	- 6 <i>g</i> + 184	1	)	+0.002 <i>m</i>	cos	(5 <i>g</i> '	- 6 <i>g</i> + 241)		
+	0.11	cos	(5 <i>g</i> '	- 7 <i>g</i> + 129	51)								
+	0.05	cos	(6 <i>g</i> '	- <i>g</i> + 137)								
+	0.92	cos	(6 <i>g</i> '	- 2 <i>g</i> + 203	41	)	+0.005 <i>m</i>	cos	(6 <i>g</i> '	- 2 <i>g</i> + 103)		
+	8.78	cos	(6 <i>g</i> '	- 3 <i>g</i> + 145	29	)	+0.043 <i>m</i>	cos	(6 <i>g</i> '	- 3 <i>g</i> + 46	48)	
+	20.79	cos	(6 <i>g</i> '	- 4 <i>g</i> + 76	42	)	+0.067 <i>m</i>	cos	(6 <i>g</i> '	- 4 <i>g</i> + 337	5)	
+	13.52	cos	(6 <i>g</i> '	- 5 <i>g</i> + 180	38	)	+0.023 <i>m</i>	cos	(6 <i>g</i> '	- 5 <i>g</i> + 80	47)	
+	6.92	cos	(6 <i>g</i> '	- 6 <i>g</i> + 283	56	)	+0.001 <i>m</i>	cos	(6 <i>g</i> '	- 6 <i>g</i> + 117)		
+	0.71	cos	(6 <i>g</i> '	- 7 <i>g</i> + 260	4	)	+0.001 <i>m</i>	cos	(6 <i>g</i> '	- 7 <i>g</i> + 307)		
+	0.06	cos	(6 <i>g</i> '	- 8 <i>g</i> + 236)								

+	0.18	cos	(	$7g' - 2g + 7^\circ 25'$	)	+	0.002 <i>m</i>	cos	(	$7g' - 2g + 283^\circ$)
+	5.50	cos	(	$7g' - 3g + 214$	14)	+	0.026 <i>m</i>	cos	(	$7g' - 3g + 118$	29')
+	34.30	cos	(	$7g' - 4g + 223$	11.7)	+	0.156 <i>m</i>	cos	(	$7g' - 4g + 125$	13)
+	5.17	cos	(	$7g' - 5g + 167$	55)	+	0.019 <i>m</i>	cos	(	$7g' - 5g + 68$	47)
+	5.43	cos	(	$7g' - 6g + 259$	28)	+	0.009 <i>m</i>	cos	(	$7g' - 6g + 159$)
+	2.68	cos	(	$7g' - 7g + 0$	22)						
+	0.34	cos	(	$7g' - 8g + 335$	14)						
+	0.03	cos	(	$7g' - 9g + 312$)						
+	1.09	cos	(	$8g' - 3g + 13$	26)	+	0.003 <i>m</i>	cos	(	$8g' - 3g + 259$)
+	16.42	cos	(	$8g' - 4g + 12$	48)	+	0.092 <i>m</i>	cos	(	$8g' - 4g + 276$	18)
+	4.89	cos	(	$8g' - 5g + 304$	1)	+	0.023 <i>m</i>	cos	(	$8g' - 5g + 208$	46)
+	2.42	cos	(	$8g' - 6g + 239$	46)	+	0.009 <i>m</i>	cos	(	$8g' - 6g + 143$)
+	2.31	cos	(	$8g' - 7g + 337$	34)	+	0.003 <i>m</i>	cos	(	$8g' - 7g + 233$)
+	1.08	cos	(	$8g' - 8g + 75$	50)						
+	0.18	cos	(	$8g' - 9g + 50$	5)						
+	0.08	cos	(	$9g' - 3g + 359$)						
+	2.61	cos	(	$9g' - 4g + 340$	31)	+	0.013 <i>m</i>	cos	(	$9g' - 4g + 240$	8)
+	6.53	cos	(	$9g' - 5g + 272$	59)	+	0.037 <i>m</i>	cos	(	$9g' - 5g + 175$	24)
+	1.75	cos	(	$9g' - 6g + 10$	57)	+	0.008 <i>m</i>	cos	(	$9g' - 6g + 275$)
+	1.18	cos	(	$9g' - 7g + 316$	51)	+	0.004 <i>m</i>	cos	(	$9g' - 7g + 211$)
+	1.04	cos	(	$9g' - 8g + 54$	49)	+	0.002 <i>m</i>	cos	(	$9g' - 8g + 315$)
+	0.45	cos	(	$9g' - 9g + 151$	37)						
+	0.09	cos	(	$9g' - 10g + 125$)						
+	3.47	cos	(	$10g' - 4g + 123$	36)	+	0.023 <i>m</i>	cos	(	$10g' - 4g + 31$	11)
+	37.04	cos	(	$10g' - 5g + 63$	11.3)	+	0.273 <i>m</i>	cos	(	$10g' - 5g + 325$	46)
+	1.81	cos	(	$10g' - 6g + 22$	44)	+	0.010 <i>m</i>	cos	(	$10g' - 6g + 296$)
+	0.68	cos	(	$10g' - 7g + 88$	14)	+	0.003 <i>m</i>	cos	(	$10g' - 7g + 356$)
+	0.57	cos	(	$10g' - 8g + 33$	57)	+	0.002 <i>m</i>	cos	(	$10g' - 8g + 287$)
+	0.49	cos	(	$10g' - 9g + 131$	13)	+	0.001 <i>m</i>	cos	(	$10g' - 9g + 31$)

+0.19 cos (10g' - 10g + 226° 10')	+0.04 cos (3g'' - 4g + 285°)
+0.04 cos (10g' - 11g + 203)	+0.09 cos (4g'' - g + 125)
	+0.44 cos (4g'' - 2g + 122)
+0.65 cos (11g' - 5g + 31 58)	+0.002 m cos (11g' - 5g + 290°)
	+0.21 cos (4g'' - 3g + 282)
+1.10 cos (11g' - 6g + 322 57)	+0.005 m cos (11g' - 6g + 220)
	+0.08 cos (4g'' - 4g + 83)
+0.70 cos (11g' - 7g + 67 0)	+0.004 m cos (11g' - 7g + 330)
	+0.09 cos (5g'' - 2g + 116)
+0.25 cos (11g' - 8g + 162 23)	+0.001 m cos (11g' - 8g + 79)
	+0.05 cos (5g'' - 3g + 277)
+0.29 cos (11g' - 9g + 112 53)	+0.001 m cos (11g' - 9g + 7)
	+0.04 cos (5g'' - 4g + 80)
+0.23 cos (11g' - 10g + 208 41)	+0.01 cos (5g'' - 5g + 239)
+0.08 cos (11g' - 11g + 299 36)	+0.03 cos (6g'' - 2g + 110)
	+0.01 cos (6g'' - 3g + 270)
+0.49 cos (12g' - 6g + 296 9)	+0.004 m cos (12g' - 6g + 189)
	+0.01 cos (6g'' - 4g + 75)
+0.39 cos (12g' - 7g + 39 39)	+0.001 m cos (12g' - 7g + 299)
	+0.04 cos (7g'' - 2g + 103)
+0.26 cos (12g' - 8g + 145 5)	
+0.09 cos (12g' - 9g + 236 55)	+0.001 m cos (12g' - 9g + 346)
	+4.92 cos (6g' - 3g - 3g'' + 105° 59')
	+0.009 m cos (6g' - 3g - 3g'' + 337°)
+0.15 cos (12g' - 10g + 186 6)	+1.07 cos (6g' - 2g - 3g'' + 175° 11')
+0.11 cos (12g' - 11g + 284)	
+0.04 cos (12g' - 12g + 10)	+0.06 cos (g''' + 22°)
	+2.83 cos (g''' - g + 31 37)
+0.12 cos (g'' + g + 3)	+0.07 cos (g''' - 2g + 34)
+0.24 cos (g'' + 8)	+0.04 cos (2g''' - + 242)
+8.38 cos (g'' - g + 156 57)	+1.75 cos (2g''' - g + 243 22)
+0.13 cos (g'' - 2g + 177)	+1.52 cos (2g''' - 2g + 242 44)
+0.06 cos (2g'' + 114)	+0.06 cos (2g''' - 3g + 242)
+4.50 cos (2g'' - g + 136 22)	+0.02 cos (3g''' - g + 207)

$$\begin{aligned}
&+6.63 \cos (2g'' - 2g + 132^\circ 49') + 0.03 \cos (3g''' - 2g + 161^\circ) \\
&+0.27 \cos (2g'' - 3g + 130) + 0.10 \cos (3g''' - 3g + 274) \\
&+0.01 \cos (2g'' - 4g + 132) \\
&+0.70 \cos (3g'' - g + 131 \quad 32) + 1.48 \cos (\varphi - \mathcal{U}) \\
&+1.94 \cos (3g'' - 2g + 127 \quad 7) \\
&+0.55 \cos (3g'' - 3g + 287) + 2.55 \cos (\oplus - \mathcal{U})
\end{aligned}$$

The perturbations of the latitude are obtained in the same way as those of the logarithm of $\frac{r}{r'}$.

Value of $\delta\beta$.

$$\begin{aligned}
&+0''.037 \quad +0''.003 \quad \sin (5g' - 6g + 136^\circ) \\
&+0.015 \sin (-2g + 66^\circ) + 0''.001 \quad \sin (6g' - g + 74) \\
&+0.001 \sin (-3g + 82) + 0''.007 \quad \sin (6g' - 2g + 16) \\
&+0.005 \sin (g' + 2g + 353) + 0''.037 \quad \sin (6g' - 3g + 150) \\
&+0.104 \sin (g' + g + 8 \quad 51') + 0''.00006m \sin (g' + g + 158^\circ) \\
&\quad + 0''.048 \quad \sin (6g' - 4g + 74) \\
&+0.536 \sin (g' + 325 \quad 28) + 0.00083m \sin (g' + 54 \quad 16') \\
&\quad + 0''.012 \quad \sin (6g' - 5g + 165) \\
&+0.126 \sin (g' - g + 208 \quad 1) + 0.00032m \sin (g' - g + 188 \quad 27) \\
&\quad + 0''.003 \quad \sin (6g' - 6g + 121) \\
&+0.265 \sin (g' - 2g + 193 \quad 10) + 0.00051m \sin (g' - 2g + 103 \quad 27) \\
&\quad + 0''.001 \quad \sin (6g' - 7g + 216) \\
&+0.012 \sin (g' - 3g + 204) + 0.00005m \sin (g' - 3g + 90) \\
&\quad + 0''.004 \quad \sin (7g' - 2g + 337) \\
&+0.018 \sin (2g' + g + 283) + 0.00005m \sin (2g' + g + 14) \\
&\quad + 0''.005 \quad \sin (7g' - 3g + 144) \\
&+0.342 \sin (2g' + 265 \quad 52) + 0.00024m \sin (2g' + 313) \\
&\quad + 0''.053 \quad \sin (7g' - 4g + 44) \\
&+0.627 \sin (2g' - g + 43 \quad 9) + 0.00097m \sin (2g' - g + 137 \quad 30) \\
&\quad + 0''.011 \quad \sin (7g' - 5g + 135) \\
&+0.221 \sin (2g' - 2g + 114 \quad 42) + 0.00069m \sin (2g' - 2g + 82 \quad 11) \\
&\quad + 0''.004 \quad \sin (7g' - 6g + 245) \\
&+0.056 \sin (2g' - 3g + 267) + 0.00005m \sin (2g' - 3g + 57) \\
&\quad + 0''.002 \quad \sin (7g' - 7g + 198)
\end{aligned}$$

$+0''.003 \sin (2g' - 4g + 282^\circ)$	$+0''.00002 m \sin (2g' - 4g + 0^\circ)$
	$+0''.001 \sin (7g' - 8g + 292)$
$+0.003 \sin (3g' + g + 33)$	$+0.00002 m \sin (3g' + g + 225)$
	$+0''.001 \sin (8g' - 3g + 48)$
$+0.056 \sin (3g' + 49)$	$+0.00003 m \sin (3g' + 153)$
	$+0''.009 \sin (8g' - 4g + 201)$
$+0.165 \sin (3g' - g + 356 \quad 6')$	$+0.00008 m \sin (3g' - g + 38)$
	$+0''.008 \sin (8g' - 5g + 127)$
$+1.013 \sin (3g' - 2g + 122 \quad 15)$	$+0.00142 m \sin (3g' - 2g + 212 \quad 25')$
	$+0''.004 \sin (8g' - 6g + 222)$
$+0.057 \sin (3g' - 3g + 163 \quad 7)$	$+0.00008 m \sin (3g' - 3g + 218)$
	$+0''.001 \sin (8g' - 7g + 318)$
$+0.019 \sin (3g' - 4g + 351)$	$+0.00003 m \sin (3g' - 4g + 153)$
	$+0''.001 \sin (8g' - 8g + 90)$
$+0.001 \sin (3g' - 5g + 355)$	$+0''.004 \sin (9g' - 5g + 89)$
$+0.006 \sin (4g' + 22)$	$+0''.003 \sin (9g' - 6g + 196)$
$+0.047 \sin (4g' - g + 329 \quad 38)$	$+0''.002 \sin (9g' - 7g + 298)$
$+0.144 \sin (4g' - 2g + 99 \quad 51)$	$+0.00008 m \sin (4g' - 2g + 188)$
	$+0''.003 \sin (10g' - 4g + 66)$
$+0.247 \sin (4g' - 3g + 22 \quad 5)$	$+0.00044 m \sin (4g' - 3g + 109)$
	$+0''.073 \sin (10g' - 5g + 60 \quad 20)$
$+0.021 \sin (4g' - 4g + 342)$	$+0.00002 m \sin (4g' - 4g + 90)$
	$+0''.003 \sin (10g' - 6g + 106)$
$+0.009 \sin (4g' - 5g + 60)$	$+0.00002 m \sin (4g' - 5g + 135)$
	$+0''.001 \sin (10g' - 7g + 281)$
$+0.009 \sin (5g' + 111)$	$+0.00002 m \sin (5g' + 315)$
	$+0''.001 \sin (10g' - 8g + 23)$
$+0.184 \sin (5g' - g + 111 \quad 34)$	$+0.00043 m \sin (5g' - g + 8)$
$+0.194 \sin (5g' - 2g + 359 \quad 38)$	$+0.00007 m \sin (5g' - 2g + 288)$
$+3.548 \sin (5g' - 3g + 174 \quad 54.6)$	$+0.00092 m \sin (5g' - 3g + 327 \quad 12)$
$+0.187 \sin (5g' - 4g + 161 \quad 37)$	$+0.00011 m \sin (5g' - 4g + 238)$
$+0.008 \sin (5g' - 5g + 125)$	$+0.00005 m \sin (5g' - 5g + 104)$

The latitude referred to the ecliptic of date being denoted by $\beta_0 + \delta\beta$, the formula for getting β_0 is

$$\begin{aligned}\sin \beta_0 = & \sin i_0 \sin (l - \Omega_0) + 4''.37431 \quad m \sin (f + 35^\circ 31' 23''.2) \\ & + 0''.00057 \quad m \sin (3f + 221 \quad) \\ & + 0''.002613 \quad m^2 \sin (f + 154 \quad 39.5 \quad) \\ & + 0''.0000011 \quad m^3 \sin (f + 272 \quad 41 \quad)\end{aligned}$$

The reduction to the ecliptic is

$$R = +27''.029 \sin (2l + 342^\circ 7'.3) + 0''.002 \sin (4l + 324^\circ)$$

The larger and more important terms of these expressions are tabulated in tables to single entry; the mass of remaining small terms in tables to double entry where the horizontal argument denotes the position of Jupiter in its orbit, and the vertical argument the position of the disturbing planet when Jupiter last passed a determinate point in its orbit. The latter argument then remains constant during a revolution of Jupiter.

In this connection it is important to reduce as much as possible the magnitude of the terms multiplied by the several powers of m . This is effected by equating the rates of motion of the arguments employed in the tables to single entry. If we have the terms

$$A \sin (\chi + \alpha) + Bt \sin (\chi + \beta) + Ct^2 \sin (\chi + \gamma),$$

they can be transformed into

$$A \sin (\chi + \kappa t + \alpha) + B't \sin (\chi + \kappa t + \beta') + C't^2 \sin (\chi + \kappa t + \gamma'),$$

where κ is arbitrary. But if B' is to be a minimum, κ , B' , β' , C' and γ' are determined by the equations

$$\kappa = \frac{B}{A} \sin (\beta - \alpha),$$

$$B' \cos (\beta' - \alpha) = B \cos (\beta - \alpha),$$

$$B' \sin (\beta' - \alpha) = 0$$

$$C' \cos (\gamma' - \alpha) = C \cos (\gamma - \alpha) + \frac{1}{2} A \kappa^2,$$

$$C' \sin (\gamma' - \alpha) = C \sin (\gamma - \alpha) - B\kappa \cos (\beta - \alpha).$$

It will be perceived that if α differs from β by nearly 90° or 270° , B' will be, to a considerable extent, less than B . The formulæ for a series of terms in cosines are the same, but, as the expression for z is the most important of the three, the value of κ has, in all cases except that of Arg. XXII, been derived from it. In most cases the terms multiplied by m and m^2 are to be tabulated in tables to double entry, when the argument must be retained in the form of χ without the correction κt . But this does not change the value of κ for the first term, and the modifications in this case in the formulæ for C' and γ' are readily seen

Twenty-two arguments are employed for the tables to single entry; they are all expressed in mean solar days, except that before 1550 and after 2150 the actual date in years is preferred to Arg. II. Arg. I is the principal term of the fundamental argument z ; and Jupiter had passed its perihelion 1781.57063 days at the epoch of the tables, but we subtract 6^d.6 from this on account of the constants which we propose to add in Tables VII–XXX to render the numbers all positive; hence the value of Arg. I at 1850.0 is 1774^d.97063. Arg. II is simply a number of current days made to be 109680 at the epoch, adopted for the purpose of tabulating terms of long period. The remaining twenty arguments are made to have the value 0^d at the epoch. The following table contains a statement of these arguments with the value of κ , the period and the daily rate of motion. With reference to κ , it is to be noted that this correction to the rate of motion has been employed only when it led to a decided reduction of the terms factored by m .

Argument.	Arc designated.	Period.	Daily motion.
I	g	4332.58795067 ^d	299.12837656 ^{''}
II	Current days merely		
III	$g' - g$	7253.4606466	— 178.67333442
IV	$5g' - 3g - 60.7275t$	4389.111213	— 295.2761817
V	$2g' - g - 18.4013t$	22241.79734	— 58.26867228
VI	$3g' - 2g - 28.459t$	5469.05729	— 236.9695417
VII	$4g' - 3g - 27.891t$	3118.073045	— 415.64132112
VIII	$3g' - g - 33.288t$	20854.24730	62.14561386
IX	$g' - 31.835t$	10766.9916	120.367884
X	$5g' - 4g - 14.48t$	2180.797774	— 594.2779355
XI	$7g' - 4g - 78.255t$	3665.75492	— 353.542456
XII	$2g' - 3g + 37.077t$	1974.48543	— 656.373545
XIII	$g' - 2g + 21.02t$	2712.74906	— 477.744151
XIV	$g' + g - 53.36t$	3089.85358	419.437349
XV	$6g' - 5g - 29.11t$	1676.60346	— 772.99131
XVI	$5g' - g + 118.47t$	4270.58739	303.471134
XVII	$9g' - 4g - 109.02t$	11497.8600	— 112.716627
XVIII	$9g' - 5g - 101.95t$	3146.96316	— 411.825604
XIX	$6g' - 3g - 3g'' - 24.61t$	4299.61313	— 301.422468
XX	$\varphi - \kappa$	236.9919	5468.541
XXI	$\oplus - \kappa$	398.8840	3249.065
XXII	$5g' - 3g + 2.082t$	4391.66883	— 295.104219

In addition to these arguments we have three vertical arguments for the tables of double entry, which are denoted as A, B, and C, severally for the actions of Saturn, Uranus, and Neptune. A is expressed in parts of which 120 make the circumference, B in parts of 60, and C in parts of 36 to the circumference. The formulæ for these arguments are—

$$\begin{aligned} A &= 75.10876 + 48.32240m - 120i, \\ B &= 33.22441 + 8.47129m - 60i, \\ C &= 28.11856 + 2.59149m - 36i, \end{aligned}$$

where m , as before, denotes the number of the revolution of Jupiter in progress ($m=0$ for that which extends from 1845, February 20, to 1857, January 0), and i is a positive or negative integer so taken that the argument may be positive and less than the number of parts into which the circumference is divided. The values of the four mean anomalies, which correspond to any point in the tables to double entry, are given by the formulæ

$$\begin{aligned} g &= 0^\circ.5484 + 0^\circ.0830912 \times \text{Arg. I}, \\ g' &= 0.0334597 \times \text{Arg. I} + 3^\circ \times A, \\ g'' &= 0.0117315 \times \text{Arg. I} + 6^\circ \times B, \\ g''' &= 0.0059814 \times \text{Arg. I} + 10^\circ \times C. \end{aligned}$$

In tabulating the perturbations of Jupiter a difficulty is met which arises from the decimal scale of notation. We are restricted to the choice between having a certain degree of accuracy or one ten times as great; while the degree of accuracy one would have desired lies midway between the two. It is, of course, possible by taking the latter alternative to avoid lack of precision. But the objections to this course of proceeding are manifest. In the first place, the quantities tabulated are three times larger than there is any necessity for their being; consequently their differences are magnified in the same proportion, rendering interpolation more difficult—a matter of great importance in the tables to double entry. In the second place, second or higher orders of differences, before insensible, now become sensible. These difficulties can only be obviated by giving the tables greater extension. Moreover, the number of significant figures in the quantities tabulated is, in the case of the tables to double entry, augmented from three to four, rendering it impossible to print the tables in such a way that the whole extent in the direction of Arg. I can be seen at one opening of the book. How can we avoid these inconveniences and at the same time preserve the desired degree of precision? It seems that the only course open to us is to tabulate, not the quantity finally wanted, but a multiple of it, which will simply add to the labor of the computer a single division to be performed on the sum of the quantities thus multiplied. And it may be noted that this is not an innovation now adopted for the first time, for LEVERRIER, in his *Theories of Jupiter and Saturn*, seeing that the perturbations of the semiaxis major would not have the desired degree of precision if given to seconds of arc, while they would have more than was necessary if given to tenths of a second, has adopted the course of giving the perturbations of the double of this quantity in whole seconds.

Applying these remarks to the coordinates of Jupiter, it will be seen from the construction of these tables that if we include the proportional parts, the longitude is the sum of no less than about 70 parts and the logarithm of the radius of about 50 parts. Now, each of these, determined with all possible care, may be half a unit in error. Consequently it is possible that these two coordinates, as obtained from the tables, may be in error respectively 35 and 25 units of whatever is employed as the last decimal place. Now, if we were to tabulate δz , using four decimals of the day, as a unit in the last is equivalent to $0''.03$ in the longitude, the possible error in the latter may equal $1''$. Although the occurrence of so large an error is extremely improbable, one of $0''.3$ might easily occur. It appears to me desirable that the error should not exceed $0''.1$, setting aside very unusual cases. With regard to the radius, on account of the importance which this quantity has in the computation of the forces which Jupiter exerts on bodies which approach it very nearly, it appears to me that the error in $\log r$ should not, as derived from the tables, in any case much exceed a unit in the seventh decimal. But this degree of accuracy can not be attained if we limit ourselves to the seventh decimal in the tabulation of the inequalities. While, if we adopt eight, we fall upon the inconveniences which have been mentioned. Again, in both coordinates in the portions which are factored by m or its powers, we are troubled with like difficulties. It is desirable to have the same degree of accuracy 300 years from the epoch as at the epoch itself; m is then about 25, which is not a power of 10, but lies nearer the mean proportional between 10 and 100.

In presence of these difficulties, I have adopted—regard being had to the mode of construction of the tables—a course which seems as simple as possible. The portions of the perturbations of the fundamental argument and of the common logarithm of the radius, independent of m and its powers, have not been tabulated, the first to four decimals of a day, or the second to seven decimals, but three times these quantities. The remaining portions of these coordinates and the latitude have been tabulated without modification. Hence, the extra labor imposed on the employer of these tables is simply to add separately the two portions of the two coordinates thus modified and execute a division by 3 on the sums.

We proceed to notice the construction of each table.

Table I contains the values of Arguments I–XXII and of $\pi + 50''.264708t$ for Greenwich mean noon of January 0 (January 1 in bissextile years) of each year from 1750 to 1950.

Table II contains the quantities which it is necessary to add to the arguments of the nineteenth century (1801 to 1900, inclusive) in order to obtain the arguments of correspondent years of other centuries. The letters J and G in the column of centuries denote severally the Julian and Gregorian calendars. It is recommended that in deriving positions of Jupiter from these tables for dates previous to 1550 and subsequent to 2150, one be content with a degree of accuracy a hundred times less than the tables afford between these epochs. In accordance with this recommendation before 1500 the decimals of a day are omitted from all the arguments except I, for which three are given instead of five; also the decimals of a second are omitted from $\pi + ht$. For the same reason no numbers are given for XIX, XX, and XXI. The inequalities corresponding to these arguments are too minute to be worth consideration at times more

remote from the epoch of the tables than 300 years. If one is very fastidious, one may take as the sum of their values the sum of the constants which have been added in the tables to render all the numbers positive. It will be perceived that no numbers are given for II during this time; it has been preferred to tabulate the inequalities appertaining to this argument with the actual date in years.

Table III enables one readily to find the number of days from the beginning of the year which it is necessary to add to the values of the arguments given in Table I in order to obtain the values which belong to any desired time. The beginning of the year, when it is common, is taken to be the mean noon of December 31 of the preceding year, usually designated as January 0, but when the year is bissextile, the mean noon of January 1 is assumed as the beginning. The prime meridian is that of Greenwich.

Table IV enables us to find the motion of $\pi + ht$ from the beginning of the year; h or the motion in a Julian year being $50''.264708$.

Table V gives the values of A, B, and C, the vertical arguments for the tables of double entry as functions of the integer m . When m contains but a single figure, which is always the case between 1750 and 1950, the actual values of the arguments are found in the middle portion of the table. But when m contains more than one figure, the change for multiples of 10 in m is found in the upper and lower portions of the table, for negative values of m in the upper and for positive in the lower. Thus, if we wish the values of the arguments correspondent to $m = -47$, we add the numbers on the line of $m = -40$ to those on the line of $m = -7$, and where it is necessary subtract the period of the argument given in the following table. m is an integer, and remains constant while Arg. I is passing through a period, and as long as m remains constant A, B, and C do so likewise.

Table VI contains the periods of the arguments which it is necessary sometimes to subtract from the values obtained by the assistance of the preceding tables. It may often save some labor if we remember that the only object of subtracting a multiple of the period from an argument is to bring the latter within the compass of the table. Usually the tabulation has been extended some days beyond the end of the period. Hence the arguments may often be allowed to run a little beyond their periods. When this is done with Arg. I, however, the integer m must be allowed to stand unchanged, as also the arguments A, B, and C. But when the limits of the tabulation do not allow Arg. I to increase further, we subtract the period and augment m algebraically by a unit, and at the same time A, B, and C change their values *per saltum*. Thus it is well to bear in mind that the precise time of change of the values of m , A, B, and C is, to a certain extent, arbitrary, being limited only by the extent of the tabulation; and that the exact time of this change is when one chooses that the period shall be subtracted from Arg. I, which has the effect of throwing one back from a point near the ending of a table to one near its beginning. And the change of a unit in the value of m exactly counterbalances any changes which may be produced by this throwing back from the end to the beginning of a table in which Arg. I is an argument. In one table 5A is used as a vertical argument. As the period of 5A is the same as that of A—viz, 120 units—after multiplying A by 5, we reject as many multiples of 120 as possible.

Tables I–VI contain all that is necessary for the formation of the arguments.

Tables VII–XXXVI contain the inequalities of the fundamental argument. In Tables VII–XXX, containing the portion not to be multiplied by the integer m or its powers, the inequalities, for the reason previously stated, have been multiplied by 3.

Desiring that m may be an integer, in the preceding expressions we everywhere write $m + \Delta m$, for m , Δm denoting the fractional portion, which may sometimes be negative as well as positive. We adopt the following expression for Δm :

$$\Delta m = \frac{\text{Arg. I} - 1774^{\text{d}}.97}{4332^{\text{d}}.59}$$

This makes $\Delta m = 0$ at the epoch of the tables, and as the integer $m = 0$ at this time the sum vanishes as it should do.

Tables VII, XXXI, XXXIV, and XXXVI are connected together. To explain their construction we put

$$\begin{aligned} X_0 &= 0^{\text{d}}.00237 \sin(-2g + 35^{\circ}.1) + 0^{\text{d}}.00047 \sin(-3g + 137^{\circ}) \\ &\quad + 0^{\text{d}}.00002 \sin(-4g + 103^{\circ}), \\ X_1 &= 0^{\text{d}}.0000008 + 0^{\text{d}}.0399278 \sin(-g + 227^{\circ} 27' 45''.7) \\ &\quad + 0^{\text{d}}.0003156 \sin(-2g + 224^{\circ} 50'.8) + 0^{\text{d}}.0000044 \sin(-3g + 224^{\circ}), \\ X_2 &= 0^{\text{d}}.00003919 + 0^{\text{d}}.00003267 \sin(-g + 298^{\circ} 22') \\ &\quad + 0^{\text{d}}.00000126 \sin(-2g + 284^{\circ}.8) + 0^{\text{d}}.00000003 \sin(-3g + 276^{\circ}), \\ X_3 &= 0^{\text{d}}.0000000904 + 0^{\text{d}}.0000000020 \sin(-g + 46^{\circ}) + 0^{\text{d}}.0000000001 \sin(-2g + 274^{\circ}). \end{aligned}$$

In all these expressions the value of g is

$$g = 0^{\circ} 32' 54''.25 + 299''.128377 \times \text{Arg. I.}$$

Table VII then contains the terms

$$3 \delta z = 0^{\text{d}}.0600 + X_0 + 3X_1 \Delta m + 3X_2 (\Delta m)^2 + 3X_3 (\Delta m)^3.$$

The constant $0^{\text{d}}.0600$ is added simply to render all the quantities positive.

Table XXXI contains the terms (to be multiplied by the integer m)

$$-0^{\text{d}}.000670 + X_1 + 2X_2 \Delta m + 3X_3 (\Delta m)^2.$$

The negative constant is added to counterbalance the two positive constants added in Tables XXXII and XXXIII.

Table XXXIV contains the terms (to be multiplied by m^2)

$$-0^{\text{d}}.00000180 + X_2 + 3X_3 \Delta m.$$

The negative constant is applied to counterbalance the positive constant added in Table XXXV.

Table XXXVI contains X_3 (to be multiplied by m^3).

Table VIII contains the long-period inequalities

$$\begin{aligned}
 3\delta z = & 12^d.6285 + [11^d.99624 - .0066399m] \sin (5g' - 2g - 81''.97007t \\
 & + 67^\circ 8' 55''.73) + {}^d.00002196m^2 \sin (5g' - 2g - 81''.97t \\
 & + 48^\circ 49'.6) \\
 & + [0.11056 - .0001042m] \sin (10g' - 4g - 145''.72t + 313\ 41.0) \\
 & + .00000189m^2 \sin (10g' - 4g - 145''.72t + 311\ 27\) \\
 & + [0.01922 - .0000128m] \sin (7g' - 3g - 82''.60t + 214\ 9.8) \\
 & + .00000040m^2 \sin (7g' - 3g - 82''.60t + 209\) \\
 & + [0.00279 - .0000010m] \sin (8g' - 3g - 97''.72t + 198^\circ\ 1') \\
 & + [0.00065 - .0000020m] \sin (12g' - 5g + 69''.63t + 35^\circ 13'\) \\
 & + [0.08687 - .0001870m] \sin (6g' - 2g - 3g'' - 56''.21t + 187^\circ 50') \\
 & - .0000053m \sin (6g' - 3g - 3g'' - 24''.61t + 105^\circ 59')
 \end{aligned}$$

Before 1550 and after 2150 it has been preferred to tabulate the value of this expression with only two decimals of the day at intervals of 20 years. It should be noted that the negative years are astronomical, not chronological. During the interval 1550-2150 II is employed as the argument. For the period 1750-1950 the intervals of tabulation are 360 days, but outside of this period it has been thought sufficient to give the values at intervals three times as long.

Table IX contains the terms

$$\begin{aligned}
 3\delta z = & {}^d2.5000 + {}^d0.80076 \sin (g' - g + 79^\circ 12' 10'') \\
 & + 1.95201 \sin (2g' - 2g + 336^\circ 53' 48''.5) \\
 & + 0.16275 \sin (3g' - 3g + 57\ 42\ 53\) \\
 & + 0.03622 \sin (4g' - 4g + 129\ 27.7\) \\
 & + 0.01124 \sin (5g' - 5g + 206\ 52.6\) \\
 & + 0.00374 \sin (6g' - 6g + 285\ 43\) \\
 & + 0.00139 \sin (7g' - 7g + 2\ 15\) \\
 & + 0.00054 \sin (8g' - 8g + 77.7\) \\
 & + 0.00022 \sin (9g' - 9g + 154.2\) \\
 & + 0.00009 \sin (10g' - 10g + 230\) \\
 & + 0.00004 \sin (11g' - 11g + 304\) \\
 & + 0.00002 \sin (12g' - 12g + 12\)
 \end{aligned}$$

Table X contains the terms

$$3\delta z = 1^d.6200 + 1^d.61407 \sin (5g' - 3g - 60''.7275t + 176^\circ 27' 51''.0) \\ + 0.00097 \sin (10g' - 6g - 121.4550t + 16 23)$$

Table XI contains the terms

$$3\delta z = 1^d.4500 + 1^d.23371 \sin (2g' - g - 18''.4013t + 1^\circ 24' 46''.9) \\ + 0.16887 \sin (4g' - 2g - 36.8026t + 98 28 4) \\ + 0.01185 \sin (6g' - 3g - 55.2039t + 150 52.8) \\ + 0.01868 \sin (8g' - 4g - 73.6052t + 13 32.7) \\ + 0.03588 \sin (10g' - 5g - 92.0065t + 63 18.2) \\ + 0.00055 \sin (12g' - 6g - 110.4078t + 293.5)$$

Table XII contains the terms

$$3\delta z = 0^d.8300 + 0^d.82890 \sin (3g' - 2g - 28''.459t + 127^\circ 22' 55'') \\ + 0.01526 \sin (6g' - 4g - 56.918t + 74 36.0) \\ + 0.00107 \sin (9g' - 6g - 85.377t + 14 51) \\ + 0.00017 \sin (12g' - 8g - 113.836t + 144.1)$$

Table XIII contains the terms

$$3\delta z = 0^d.1600 + 0^d.15021 \sin (4g' - 3g - 27''.891t + 26^\circ 2' 42'') \\ + 0.00137 \sin (8g' - 6g - 55.782t + 234 50) \\ + 0.00004 \sin (12g' - 9g - 83.673t + 223)$$

Table XIV contains the terms

$$3\delta z = 0^d.1500 + 0^d.14079 \sin (3g' - g - 33''.288t + 312^\circ 11' 29'') \\ + 0.00151 \sin (6g' - 2g - 66.576t + 29 31) \\ + 0.00009 \sin (9g' - 3g - 99.864t + 170)$$

Table XV contains the terms

$$3\delta z = 0^d.1700 + 0^d.11188 \sin (g' - 31''.835t + 150^\circ 56' 5'') \\ + 0.06833 \sin (2g' - 63.670t + 123 49.3) \\ + 0.03696 \sin (3g' - 95.505t + 270 58.6) \\ + 0.00015 \sin (4g' - 127.340t + 177) \\ + 0.00004 \sin (5g' - 159.175t + 45)$$

Table XVI contains the terms

$$3\delta z = 0^d.0400 + 0^d.03677 \sin (5g' - 4g - 14''.48 t + 133^\circ 33'.6) \\ + 0.00030 \sin (10g' - 8g - 28.96 t + 28.3)$$

Table XVII contains the terms

$$3 \delta z = 0^d.0300 + 0^d.02905 \sin (7g' - 4g - 78''.255t + 223^\circ 47'.7)$$

Table XVIII contains the terms

$$3 \delta z = 0^d.0300 + 0^d.02819 \sin (2g' - 3g + 37''.077t + 331^\circ 31'.8) \\ + 0.00009 \sin (4g' - 6g + 74.154t + 33 \quad)$$

Table XIX contains the terms

$$3 \delta z = 0^d.0200 + 0^d.01513 \sin (g' - 2g + 21''.02 t + 90^\circ 37'.8) \\ + 0.00054 \sin (2g' - 4g + 42.04 t + 305.8 \quad)$$

Table XX contains the terms

$$3 \delta z = 0^d.0190 + 0^d.01241 \sin (g' + g - 53''.36 t + 215^\circ 13'.8) \\ + 0.00013 \sin (2g' + 2g - 106.72 t + 206 \quad)$$

Table XXI contains the terms

$$3 \delta z = 0^d.0100 + 0^d.00806 \sin (6g' - 5g - 29''.11 t + 179^\circ 13') \\ + 0.00007 \sin (12g' - 10g - 58.22 t + 184 \quad)$$

Table XXII contains the terms

$$3 \delta z = 0^d.0100 + 0^d.00779 \sin (5g' - g + 118''.47 t + 1^\circ 46'.5)$$

Table XXIII contains the terms

$$3 \delta z = 0^d.0060 + 0^d.00530 \sin (9g' - 4g - 109''.02 t + 344^\circ 38')$$

Table XXIV contains the terms

$$3 \delta z = 0^d.0060 + 0^d.00505 \sin (9g' - 5g - 101''.95 t + 272^\circ 23')$$

Table XXV contains the terms

$$3 \delta z = 0^d.0050 + 0^d.00469 \sin (6g' - 3g - 3g'' - 24''.61 t + 105^\circ 59')$$

Table XXVI contains the terms

$$3 \delta z = 0^d.0010 + 0^d.00070 \sin (\varpi - u).$$

Table XXVII contains the terms

$$3 \delta z = 0^d.0020 + 0^d.00122 \sin (\oplus - u).$$

The two preceding tables are arranged in such a way that no interpolation is necessary.

This exhausts the terms it is deemed necessary to tabulate in tables to single entry. The remainder being quite small will be tabulated in tables to double entry. Tables XXVIII, XXXII, XXXIII, and XXXV are connected together. To explain their construction, I make the following designations. All terms having a single unit for their coefficients are neglected.

In units of the 5th decimal of the day.

$$\begin{aligned}
 X_0 = & + 5 \sin (g' + 3g + 147^\circ) + 32 \sin (6g' - 7g + 254^\circ.5) \\
 & + 34 \sin (10g' - 7g + 93^\circ.5) \\
 & + 129 \sin (g' + 2g + 123^\circ.3) + 4 \sin (6g' - g + 320^\circ) \\
 & + 4 \sin (9g' - 10g + 124^\circ) \\
 & + 109 \sin (g' - 3g + 108^\circ.4) + 2 \sin (6g' - 8g + 225^\circ) \\
 & + 26 \sin (10g' - 9g + 129^\circ.5) \\
 & + 18 \sin (g' - 4g + 212^\circ) + 8 \sin (7g' - 2g + 213^\circ) \\
 & + 2 \sin (10g' - 11g + 201^\circ) \\
 & + 488 \sin (2g' + g + 184^\circ.3) + 295 \sin (7g' - 5g + 161^\circ.5) \\
 & + 5 \sin (11g' - 4g + 286^\circ) \\
 & + 2 \sin (2g' - 5g + 300^\circ) + 306 \sin (7g' - 6g + 258^\circ.8) \\
 & + 97 \sin (11g' - 5g + 34^\circ.2) \\
 & + 62 \sin (3g' + g + 275^\circ.9) + 15 \sin (7g' - 8g + 330^\circ) \\
 & + 79 \sin (11g' - 6g + 321^\circ.9) \\
 & + 407 \sin (3g' - 4g + 38^\circ.2) + 10 \sin (8g' - 2g + 340^\circ) \\
 & + 40 \sin (11g' - 7g + 66^\circ.0) \\
 & + 14 \sin (3g' - 5g + 328^\circ) + 320 \sin (8g' - 5g + 304^\circ.4) \\
 & + 12 \sin (11g' - 8g + 168^\circ.0) \\
 & + 687 \sin (4g' - g + 191^\circ.50) + 124 \sin (8g' - 7g + 336^\circ.5) \\
 & + 15 \sin (11g' - 9g + 104^\circ) \\
 & + 153 \sin (4g' - 5g + 104^\circ.35) + 8 \sin (8g' - 9g + 47^\circ) \\
 & + 12 \sin (11g' - 10g + 209^\circ) \\
 & + 68 \sin (5g' - 6g + 178^\circ.7) + 63 \sin (9g' - 7g + 312^\circ.5) \\
 & + 23 \sin (12g' - 7g + 38^\circ.8) \\
 & + 4 \sin (5g' - 7g + 120^\circ) + 54 \sin (9g' - 8g + 53^\circ.6) \\
 & + 5 \sin (12g' - 11g + 284^\circ)
 \end{aligned}$$

In units of the 7th decimal of the day.

$$\begin{aligned}
 X. = & + 23 \sin (g' + 2g + 21^\circ.3) + 31 \sin (3g' - 4g + 100^\circ.4) \\
 & + 91 \sin (8g' - 4g + 258^\circ.9) \\
 & + 21 \sin (g' + g + 35^\circ.2) + 2 \sin (3g' - 5g + 50^\circ) \\
 & + 52 \sin (8g' - 5g + 207^\circ.9) \\
 & + 135 \sin (g' + 330^\circ.9) + 4 \sin (4g' + 267^\circ) \\
 & + 3 \sin (8g' - 6g + 111^\circ) \\
 & + 18 \sin (g' - g + 245^\circ.0) + 120 \sin (4g' - g + 84^\circ.0) \\
 & + 6 \sin (8g' - 7g + 239^\circ) \\
 & + 72 \sin (g' - 2g + 90^\circ.6) + 667 \sin (4g' - 2g + 346^\circ.19') \\
 & + 2 \sin (9g' - 3g + 260^\circ) \\
 & + 10 \sin (g' - 3g + 200^\circ) + 109 \sin (4g' - 3g + 206^\circ.0) \\
 & + 13 \sin (9g' - 4g + 164^\circ.6) \\
 & + 84 \sin (2g' + g + 86^\circ.6) + 15 \sin (4g' - 4g + 36^\circ.8) \\
 & + 12 \sin (9g' - 5g + 92^\circ.4) \\
 & + 299 \sin (2g' + 266^\circ.4) + 9 \sin (4g' - 5g + 168^\circ.6) \\
 & + 4 \sin (9g' - 6g + 118^\circ) \\
 & + 2512 \sin (2g' - g + 1^\circ.24'.7) + 16 \sin (6g' - 2g + 280^\circ) \\
 & + 7 \sin (9g' - 7g + 219^\circ) \\
 & + 88 \sin (2g' - 2g + 354^\circ.6) + 467 \sin (6g' - 3g + 277^\circ.9) \\
 & + 3 \sin (9g' - 8g + 318^\circ) \\
 & + 162 \sin (2g' - 3g + 331^\circ.5) + 25 \sin (6g' - 4g + 229^\circ.5) \\
 & + 12 \sin (11g' - 5g + 295^\circ) \\
 & + 6 \sin (2g' - 4g + 352^\circ) + 5 \sin (6g' - 5g + 359^\circ) \\
 & + 12 \sin (11g' - 6g + 225^\circ) \\
 & + 12 \sin (3g' + g + 185^\circ.2) + 2 \sin (6g' - 7g + 310^\circ) \\
 & + 4 \sin (11g' - 7g + 328^\circ) \\
 & + 135 \sin (3g' + 30^\circ.1) + 6 \sin (7g' - 2g + 88^\circ) \\
 & + 3 \sin (12g' - 6g + 106^\circ) \\
 & + 191 \sin (3g' - g + 132^\circ.2) + 64 \sin (7g' - 4g + 43^\circ.8) \\
 & + 2 \sin (12g' - 7g + 293^\circ) \\
 & + 584 \sin (3g' - 2g + 307^\circ.4) + 37 \sin (7g' - 5g + 64^\circ.6) \\
 & + 2 \sin (12g' - 8g + 244^\circ) \\
 & + 58 \sin (3g' - 3g + 150^\circ.6) + 16 \sin (7g' - 6g + 159^\circ.6)
 \end{aligned}$$

$$\begin{aligned}
X_1' = & + 18 \sin (5g' + 21^\circ.5) + 6 \sin (5g' - 5g + 134^\circ) \\
& + 6 \sin (10g' - 6g + 94) \\
& + 1003 \sin (5g' - g + 146'.6) + 3 \sin (5g' - 6g + 245) \\
& + 4 \sin (10g' - 7g + 352) \\
& + 1832 \sin (5g' - 3g + 356.27.8) + 212 \sin (10g' - 5g + 303.0) \\
& + 2 \sin (10g' - 8g + 270) \\
& + 56 \sin (5g' - 4g + 133.6)
\end{aligned}$$

In units of the 9th decimal of the day.

$$\begin{aligned}
X_2 = & + 31 \sin (g' + 159^\circ.9) + 95 \sin (3g' - 2g + 151^\circ.9) \\
& + 635 \sin (5g' - g + 290.2) \\
& + 148 \sin (2g' + 131.5) + 3 \sin (3g' - 3g + 279) \\
& + 630 \sin (5g' - 3g + 209.05) \\
& + 196 \sin (2g' - g + 259.8) + 47 \sin (4g' - 2g + 206.5) \\
& + 44 \sin (5g' - 4g + 119.2) \\
& + 8 \sin (2g' - 2g + 39) + 11 \sin (4g' - 3g + 71) \\
& + 15 \sin (6g' - 3g + 156) \\
& + 42 \sin (3g' - g + 245.0) + 4 \sin (5g' + 70) \\
& + 120 \sin (7g' - 4g + 221.6)
\end{aligned}$$

Table XXVIII contains the terms (the last, however, is insensible),

$$3 \delta z = 0^d.0215 + X_0 + 3 (X_1 + X_1') \Delta m + 3 X_2 (\Delta m)^2.$$

Table XXXII contains the terms of δz (to be multiplied by m),

$$0^d.000360 + X_1 + 2 X_2 \Delta m.$$

Table XXXIII contains the terms of δz (also to be multiplied by m),

$$0^d.000310 + X_1'.$$

Table XXXV contains the terms of δz (to be multiplied by m^2),

$$0^d.00000180 + X_2.$$

Table XXIX contains the terms of $3 \delta z$ arising from the action of Uranus, viz:

$$\begin{aligned}
3 \delta z = & 0^d.0250 + 0^d.00010 \sin (g'' + g + 183^\circ) + 0^d.00091 \sin (3g'' - g + 132^\circ.2) \\
& + 0.00003 \sin (5g'' - g + 127^\circ) \\
& + 0.00271 \sin (g'' + 174.7) + 0.00144 \sin (3g'' - 2g + 126.9) \\
& + 0.00008 \sin (5g'' - 2g + 115)
\end{aligned}$$

$$\begin{aligned}
& +0^d.00904 \sin (g'' - g + 156^\circ.95) + 0^d.00034 \sin (3g'' - 3g + 287^\circ.5) \\
& \quad + 0.00003 \sin (5g'' - 3g + 277) \\
& + 0.00006 \sin (g'' - 2g + 188) + 0.00002 \sin (3g'' - 4g + 283) \\
& \quad + 0.00002 \sin (5g'' - 4g + 78) \\
& + 0.00010 \sin (2g'' + 190) + 0.00015 \sin (4g'' - g + 128.6) \\
& \quad + 0.00002 \sin (6g'' - 2g + 109) \\
& + 0.00515 \sin (2g'' - g + 136.7) + 0.00034 \sin (4g'' - 2g + 121.1) \\
& \quad + 0.00015 \sin (7g'' - g + 116) \\
& + 0.00461 \sin (2g'' - 2g + 132.8) + 0.00013 \sin (4g'' - 3g + 282.3) \\
& \quad + 0.00014 \sin (7g'' - 2g + 103) \\
& + 0.00012 \sin (2g'' - 3g + 130.8) + 0.00004 \sin (4g'' - 4g + 83)
\end{aligned}$$

Table XXX contains the terms of $3 \delta z$ arising from the action of Neptune, viz:

$$\begin{aligned}
3 \delta z = & 0^d.0060 + 0^d.00011 \sin (g''' + 99^\circ.3) + 0^d.00178 \sin (2g''' - g + 243^\circ.5) \\
& + 0.00002 \sin (3g''' - g + 209) \\
& + 0.00287 \sin (g''' - g + 31.6) + 0.00102 \sin (2g''' - 2g + 242.8) \\
& + 0.00002 \sin (3g''' - 2g + 151) \\
& + 0.00004 \sin (g''' - 2g + 35) + 0.00002 \sin (2g''' - 3g + 242) \\
& + 0.00006 \sin (3g''' + 3g + 273) \\
& + 0.00002 \sin (2g''' + 61)
\end{aligned}$$

It will be seen that the sum of the constants applied in Tables VII-XXX is $19^d.8$, which is three times the constant $6^d.6$ subtracted from Arg. I. Also the sum of the three constants applied in Tables XXXI, XXXII, and XXXIII vanishes, as does the sum of those applied in Tables XXXIV and XXXV.

Therefore, by dividing the sum of the quantities obtained from Tables VII-XXX by 3, and multiplying the sum of those obtained from Tables XXXI-XXXIII by m , and the sum of those from Tables XXXIV and XXXV by m^2 , and that from Table XXXVI by m^3 , we shall have four quantities which, added to the value of Arg. I, give the Fundamental Argument.

Table XXXVII contains the sum of the true anomaly and the reduction to the ecliptic of a planet moving according to the elliptic theory and having the elements stated at the beginning of this explanation. The argument is the number of days elapsed since the last perihelion passage. The formulæ used to compute this table are

$$\begin{aligned}
f = & nz + 19900''.339 \sin nz + 599''.829 \sin 2nz + 25''.070 \sin 3nz + 1''.198 \sin 4nz \\
& + 0.062 \sin 5nz + 0.003 \sin 6nz \\
R = & + 27''.029 \sin (2f + 5^\circ 56'.4) + 0''.002 \sin (4f + 12^\circ).
\end{aligned}$$

The quantity $f + R$ is tabulated at intervals of 4 days, the argument increasing by 4 days in passing horizontally to the right from one column to the next. For the sake of facilitating the interpolation there is added, in a column to the right, the common logarithm of the rate of motion per day of the argument in seconds of arc (the characteristic, always 2, is not written).

The heliocentric longitude of Jupiter referred to the mean equinox and ecliptic of date is then the sum of $\pi + 50''.264708t$, derived from Tables I and IV, and $f + R$ from this table.

Tables XXXVIII-LX are concerned with the common logarithm of the radius. For the reason before stated the inequalities in Tables XXXVIII-LV have been multiplied by 3; they are given units of the seventh decimal. If we put

$$\begin{aligned}
 X_0 &= -122.5 \\
 &+ 54.5 \cos(-g + 323^\circ 32') \\
 &+ 11.7 \cos(-2g + 31^\circ 43') \\
 &+ 2.4 \cos(-3g + 133^\circ) \\
 &+ 0.2 \cos(-4g + 111^\circ) \\
 \\
 X_1 &= -2.053 \\
 &+ 125.634 \cos(-g + 227^\circ 27' 3'') \\
 &+ 3.025 \cos(-2g + 227^\circ 13.7') \\
 &+ 0.137 \cos(-3g + 229.4^\circ) \\
 &+ 0.008 \cos(-4g + 229^\circ) \\
 \\
 X_2 &= -0.00034 \\
 &+ 0.12068 \cos(-g + 297^\circ 58'.9) \\
 &+ 0.00515 \cos(-2g + 285.8^\circ) \\
 &+ 0.00122 \cos(-3g + 272.4^\circ)
 \end{aligned}$$

Table XXXVIII contains the terms

$$3 \delta. \log \frac{r}{\bar{r}} = 260 + X_0 + 3 X_1 \Delta m + 3 X_2 (\Delta m)^2,$$

Table LVI contains the terms of $\delta. \log \frac{r}{\bar{r}}$ (to be multiplied by m),

$$-2.00 + X_1 + 2 X_2 \Delta m,$$

Table LVIII contains the terms of $\delta. \log \frac{r}{\bar{r}}$ (to be multiplied by m^2),

$$-0.0050 + X_2.$$

Table XXXIX contains the terms

$$\begin{aligned}
 3 \delta . \log \frac{r}{\bar{r}} = & 750 + [688.1 - 0.222 \ m] \cos (5g' - 2g - 81''.26t + 237^\circ 53'.6) \\
 & + 0.0016 m^2 \cos (5g' - 2g - 81''.26t + 297^\circ \quad) \\
 & + [10.4 - 0.003 \ m] \cos (10g' - 4g - 112.8 \ t + 123.6 \quad) \\
 & + [16.5 - 0.008 \ m] \cos (7g' - 3g - 80.6 \ t + 214.2 \quad) \\
 & + [3.3 - 0.003 \ m] \cos (8g' - 3g - 41.3 \ t + 13.4 \quad) \\
 & + 3.2 \cos (6g' - 2g - 3g'' + 175 \quad) \\
 & + 0.017 \ m \cos (6g' - 3g - 3g'' + 286 \quad).
 \end{aligned}$$

Table XL contains the terms

$$\begin{aligned}
 3 \delta . \log \frac{r}{\bar{r}} = & 9600 + 1635.4 \cos (g' - g + 79^\circ 11' 26'') \\
 & + 6910.1 \cos (2g' - 2g + 336^\circ 54' 2''.4) \\
 & + 724.1 \cos (3g' - 3g + 58 \ 30.9 \quad) \\
 & + 179.4 \cos (4g' - 4g + 127 \ 51.1 \quad) \\
 & + 61.7 \cos (5g' - 5g + 204 \ 48 \quad) \\
 & + 20.8 \cos (6g' - 6g + 283 \ 56 \quad) \\
 & + 8.0 \cos (7g' - 7g + 0 \ 22 \quad) \\
 & + 3.2 \cos (8g' - 8g + 75 \ 50 \quad) \\
 & + 1.3 \cos (9g' - 9g + 152 \quad) \\
 & + 0.6 \cos (10g' - 10g + 226 \quad) \\
 & + 0.2 \cos (11g' - 10g + 300 \quad) \\
 & + 0.1 \cos (12g' - 12g + 10 \quad).
 \end{aligned}$$

Table XLI contains the terms

$$\begin{aligned}
 3 \delta . \log \frac{r}{\bar{r}} = & 5100 + 5037.6 \cos (5g' - 3g - 60''.7275t + 176^\circ 23' 50'') \\
 & + 5.4 \cos (10g' - 6g - 121.4550t + 22 \ 44 \quad).
 \end{aligned}$$

Table XLII contains the terms

$$\begin{aligned}
 3 \delta . \log \frac{r}{\bar{r}} = & 1500 + 1149.0 \cos (2g' - g - 18''.4013t + 356^\circ 11' 18'') \\
 & + 255.8 \cos (4g' - 2g - 36.8026t + 94 \ 3.3 \quad) \\
 & + 26.3 \cos (6g' - 3g - 55.2039t + 145 \ 29 \quad) \\
 & + 49.2 \cos (8g' - 4g - 73.6052t + 12 \ 48 \quad) \\
 & + 111.1 \cos (10g' - 5g - 92.0065t + 63 \ 11.3 \quad) \\
 & + 1.5 \cos (12g' - 6g - 110.4078t + 296 \quad).
 \end{aligned}$$

Table XLIII contains the terms

$$\begin{aligned} 3 \delta \cdot \log \frac{r}{r'} = & 2400 + 2215.3 \cos (3g' - 2g - 28''.459t + 126^\circ 35' 36'') \\ & + 62.4 \cos (6g' - 4g - 56.918t + 76.42) \\ & + 5.3 \cos (9g' - 6g - 85.377t + 10.57) \\ & + 0.8 \cos (12g' - 8g - 113.836t + 145). \end{aligned}$$

Table XLIV contains the terms

$$\begin{aligned} 3 \delta \cdot \log \frac{r}{r'} = & 600 + 579.6 \cos (4g' - 3g - 27''.891t + 27^\circ 0'.7) \\ & + 7.3 \cos (8g' - 6g - 55.782t + 239.46) \\ & + 0.3 \cos (12g' - 9g - 83.673t + 237). \end{aligned}$$

Table XLV contains the terms

$$\begin{aligned} 3 \delta \cdot \log \frac{r}{r'} = & 200 + 169.3 \cos (3g' - g - 33''.288t + 133^\circ 2'.4) \\ & + 2.8 \cos (6g' - 2g - 66.576t + 203.41) \\ & + 0.3 \cos (9g' - 3g - 99.864t + 359). \end{aligned}$$

Table XLVI contains the terms

$$\begin{aligned} 3 \delta \cdot \log \frac{r}{r'} = & 400 + 140.6 \cos (g' - 31''.835t + 341^\circ 13'.9) \\ & + 183.2 \cos (2g' - 63.670t + 305.11.3) \\ & + 131.7 \cos (3g' - 95.505t + 90.51) \\ & + 0.7 \cos (4g' - 127.340t + 356) \\ & + 0.4 \cos (5g' - 159.175t + 215). \end{aligned}$$

Table XLVII contains the terms

$$\begin{aligned} 3 \delta \cdot \log \frac{r}{r'} = & 200 + 195.2 \cos (5g' - 4g - 14''.48t + 141^\circ 13'.5) \\ & + 1.7 \cos (10g' - 8g - 28.96t + 34). \end{aligned}$$

Table XLVIII contains the terms

$$3 \delta \cdot \log \frac{r}{r'} = 200 + 102.9 \cos (7g' - 4g - 78''.255t + 223^\circ 11'.7).$$

Table XLIX contains the terms

$$\begin{aligned} 3 \delta \cdot \log \frac{r}{r'} = & 200 + 187.0 \cos (2g' - 3g + 37''.316t + 333^\circ 10'.7) \\ & + 0.6 \cos (4g' - 6g + 74.632t + 53). \end{aligned}$$

Table L contains the terms

$$3 \delta \cdot \log \frac{r}{r'} = 20 + 14.8 \cos (6g' - 3g - 3g'' - 24''.61t + 105^\circ 59').$$

Table LI contains the terms

$$3 \delta \cdot \log \frac{r}{r'} = 5 + 4.4 \cos (\varphi - \mathcal{U}).$$

Table LII contains the terms

$$3 \delta \cdot \log \frac{r}{r'} = 10 + 7.7 \cos (\oplus - \mathcal{U}).$$

The two preceding tables are arranged in such a way that interpolation is not needed.

Tables LIII, LVII, and LIX are connected together. If we put

$$\begin{aligned} X_0 = & + 0.4 \cos (g' + 3g + 324^\circ) + 24.4 \cos (5g' - g + 180^\circ.8) \\ & + 19.6 \cos (9g' - 5g + 273.0) \\ & + 6.2 \cos (g' + 2g + 308.0) + 4.7 \cos (5g' - 6g + 184) \\ & + 3.5 \cos (9g' - 7g + 316.8) \\ & + 49.7 \cos (g' + g + 33.85) + 0.3 \cos (5g' - 7g + 130) \\ & + 3.1 \cos (9g' - 8g + 54.8) \\ & + 71.1 \cos (g' - 2g + 87.98) + 40.5 \cos (6g' - 5g + 180.6) \\ & + 0.3 \cos (9g' - 10g + 125) \\ & + 6.3 \cos (g' - 3g + 107.1) + 2.1 \cos (6g' - 7g + 260.1) \\ & + 2.0 \cos (10g' - 7g + 88.2) \\ & + 1.0 \cos (g' - 4g + 207) + 0.2 \cos (6g' - 8g + 236) \\ & + 1.5 \cos (10g' - 9g + 131) \\ & + 0.9 \cos (2g' + 2g + 19) + 0.5 \cos (7g' - 2g + 7) \\ & + 2.0 \cos (11g' - 5g + 32) \\ & + 22.3 \cos (2g' + g + 1.9) + 15.5 \cos (7g' - 5g + 167.9) \\ & + 3.3 \cos (11g' - 6g + 323.0) \\ & + 5.8 \cos (2g' - 4g + 319.9) + 16.3 \cos (7g' - 6g + 259.5) \\ & + 2.1 \cos (11g' - 7g + 67) \\ & + 0.3 \cos (2g' - 5g + 329) + 1.0 \cos (7g' - 8g + 335) \\ & + 0.7 \cos (11g' - 8g + 162) \end{aligned}$$

$$\begin{aligned}
& + 4.2 \cos (3g' + g + 94^\circ.7) + 14.7 \cos (8g' - 5g + 304^\circ.0) \\
& \quad + 0.9 \cos (11g' - 9g + 113 \quad) \\
& + 28.6 \cos (3g' - 4g + 44 \quad.2) + 6.9 \cos (8g' - 7g + 337 \quad.6) \\
& \quad + 0.7 \cos (11g' - 10g + 209 \quad) \\
& + 1.0 \cos (3g' - 5g + 357 \quad) + 0.5 \cos (8g' - 9g + 50 \quad) \\
& \quad + 1.2 \cos (12g' - 7g + 40 \quad) \\
& + 13.8 \cos (4g' - 5g + 109 \quad.2) + 7.8 \cos (9g' - 4g + 340 \quad.5) \\
& \quad + 0.4 \cos (12g' - 10g + 186 \quad) \\
& \quad + 0.3 \cos (12g' - 11g + 284 \quad),
\end{aligned}$$

$$\begin{aligned}
X_1 = & + 0.010 \cos (g' + 2g + 209^\circ) + 0.014 \cos (3g' - 4g + 98^\circ.6) \\
& \quad + 0.019 \cos (7g' - 5g + 68 \quad.8) \\
& + 0.054 \cos (g' + g + 294 \quad.5) + 0.010 \cos (4g' - g + 91 \quad.6) \\
& \quad + 0.009 \cos (7g' - 6g + 159 \quad.0) \\
& + 0.039 \cos (g' \quad + 173 \quad.7) + 0.093 \cos (4g' - 2g + 347 \quad.8) \\
& \quad + 0.024 \cos (8g' - 4g + 257 \quad.3) \\
& + 0.006 \cos (g' - g + 237 \quad) + 0.047 \cos (4g' - 3g + 208 \quad.0) \\
& \quad + 0.023 \cos (8g' - 5g + 208 \quad.7) \\
& + 0.034 \cos (g' - 2g + 131 \quad.0) + 0.006 \cos (4g' - 4g + 359 \quad) \\
& \quad + 0.003 \cos (8g' - 7g + 233 \quad) \\
& + 0.006 \cos (g' - 3g + 197 \quad) + 0.005 \cos (4g' - 5g + 168 \quad) \\
& \quad + 0.013 \cos (9g' - 4g + 240 \quad.1) \\
& + 0.035 \cos (2g' + g + 265 \quad) + 0.018 \cos (5g' \quad + 202 \quad.2) \\
& \quad + 0.037 \cos (9g' - 5g + 175 \quad.4) \\
& + 0.085 \cos (2g' \quad + 91 \quad.6) + 0.319 \cos (5g' - g + 192 \quad.1) \\
& \quad + 0.004 \cos (9g' - 7g + 211 \quad) \\
& + 0.232 \cos (2g' - g + 27 \quad.7) + 0.567 \cos (5g' - 3g + 356 \quad.8) \\
& \quad + 0.002 \cos (9g' - 8g + 315 \quad) \\
& + 0.029 \cos (2g' - 2g + 352 \quad.1) + 0.063 \cos (5g' - 4g + 91 \quad.8) \\
& \quad + 0.082 \cos (10g' - 5g + 307 \quad.8) \\
& + 0.086 \cos (2g' - 3g + 294 \quad.3) + 0.005 \cos (5g' - 5g + 243 \quad) \\
& \quad + 0.003 \cos (10g' - 6g + 103 \quad) \\
& + 0.005 \cos (2g' - 4g + 3 \quad) + 0.002 \cos (5g' - 6g + 241 \quad) \\
& \quad + 0.003 \cos (10g' - 7g + 356 \quad) \\
& + 0.007 \cos (3g' + g + 356 \quad) + 0.017 \cos (6g' - 3g + 32 \quad.7) \\
& \quad + 0.002 \cos (11g' - 5g + 290 \quad)
\end{aligned}$$

$$\begin{aligned}
& + 0.049 \cos (3g' + 211^\circ.4) + 0.012 \cos (6g' - 4g + 246^\circ.4) \\
& \quad + 0.005 \cos (11g' - 6g + 220 \quad) \\
& + 0.026 \cos (3g' - g + 292 \quad .3) + 0.023 \cos (6g' - 5g + 80 \quad .8) \\
& \quad + 0.004 \cos (11g' - 7g + 330 \quad) \\
& + 0.138 \cos (3g' - 2g + 304 \quad .7) + 0.002 \cos (7g' - 2g + 283 \quad) \\
& \quad + 0.002 \cos (12g' - 8g + 231 \quad) \\
& + 0.018 \cos (3g' - 3g + 121 \quad .1) + 0.022 \cos (7g' - 4g + 42 \quad .5), \\
X_2 = & + 0.00043 \cos (2g' + 302^\circ) + 0.00007 \cos (3g' - g + 116^\circ) \\
& \quad + 0.00007 \cos (4g' - 3g + 64 \quad) \\
& + 0.00017 \cos (2g' - g + 270 \quad) + 0.00029 \cos (3g' - 2g + 144 \quad) \\
& \quad + 0.00340 \cos (5g' - 3g + 205 \quad .6) \\
& + 0.00003 \cos (2g' - 2g + 135 \quad) + 0.00007 \cos (4g' - 2g + 90 \quad) \\
& \quad + 0.00007 \cos (5g' - 4g + 334 \quad).
\end{aligned}$$

Table LIII contains the terms

$$3 \delta \cdot \log \frac{r}{r'} = 255 + X_0 + 3X_1 \Delta m + 3X_2 (\Delta m)^2.$$

Table LVII contains the terms in $\delta \cdot \log \frac{r}{r'}$ (to be multiplied by m),

$$2.00 + X_1 + 2X_2 \Delta m.$$

Table LIX contains the terms in $\delta \cdot \log \frac{r}{r'}$ (to be multiplied by m^2),

$$0.0050 + X_2.$$

Table LIV contains the terms due to the action of Uranus

$$\begin{aligned}
3 \delta \cdot \log \frac{r}{r'} = & 80 + 0.4 \cos (g'' + g + 3^\circ) + 19.9 \cos (2g'' - 2g + 132^\circ.8) \\
& \quad + 0.3 \cos (4g'' - g + 125 \quad) \\
& + 0.7 \cos (g'' + 8 \quad) + 0.8 \cos (2g'' - 3g + 130 \quad) \\
& \quad + 1.3 \cos (4g'' - 2g + 122 \quad) \\
& + 25.1 \cos (g'' - g + 156 \quad .9) + 2.1 \cos (3g'' - g + 132 \quad) \\
& \quad + 0.6 \cos (4g'' - 3g + 282 \quad) \\
& + 0.4 \cos (g'' - 2g + 177 \quad) + 5.8 \cos (3g'' - 2g + 127 \quad .1) \\
& \quad + 0.2 \cos (4g'' - 4g + 83 \quad) \\
& + 0.2 \cos (2g'' + 114 \quad) + 1.7 \cos (3g'' - 3g + 287 \quad) \\
& \quad + 0.3 \cos (5g'' - 2g + 116 \quad) \\
& + 13.6 \cos (2g'' - g + 136 \quad .4).
\end{aligned}$$

Table LV contains the terms due to the action of Neptune,

$$\begin{aligned} 3 \delta. \log \frac{r}{\bar{r}} = & 20 + 0.2 \cos (g''' + 22^\circ) + 5.2 \cos (2g''' - g + 243^\circ) \\ & + 0.2 \cos (2g'' - 3g + 242^\circ) \\ & + 8.5 \cos (g''' - g + 31.6) + 4.6 \cos (2g''' - 2g + 243^\circ) \\ & + 0.2 \cos (g''' - 2g + 34^\circ) + 0.3 \cos (3g'' - 3g + 274^\circ). \end{aligned}$$

If to the sum of the quantities from Tables XXXVIII–LV, after its division by 3, we add the sum of the quantities from Tables LVI and LVII multiplied by m , and the sum of those from Tables LVIII and LIX multiplied by m^2 , we obtain the residual inequalities of the common logarithm of the radius expressed in units of the 7th decimal. It will be seen that the sum of the constants added in Tables XXXVIII–LV is 21800 units of the 7th decimal, which is three times the constant 0.000 726 67 subtracted from the quantities of Table LX.

Table LX contains the principal term of $\log r$, that is $\log \bar{r}$. It has been computed from the values of f derived in computing Table XXXVII, by means of the formulæ

$$\begin{aligned} \log \bar{r} = & -0.00072667 + \log a + \log (1 - e^2) - \log (1 + e \cos f) \\ = & 0.71449830 - \log (1 + e \cos f). \end{aligned}$$

The arrangement of this table is the same as that of Table XXXVII, except that the rates of motion of the tabulated quantity changing sign, it has been preferred to give the rate itself instead of its logarithm.

The factor to be multiplied by m^3 has not been tabulated, as the correction thence arising in $\log r$ scarcely amounts to a single unit in the 7th decimal, even at the distance of 300 years from the epoch.

Tables LXI–LXVII are concerned with the latitude. And specially:

Table LXI contains the terms

$$\begin{aligned} & 3''.60 + 3''.548 \sin (5g' - 3g + 2''.082t + 174^\circ 54'.6) \\ & + 0.003 \sin (10g' - 6g + 4.164t + 106^\circ). \end{aligned}$$

If we put

$$\begin{aligned} X_0 = & +0''.037 & +1''.013 \sin (3g' - 2g + 122^\circ.25) \\ & & +0.048 \sin (6g' - 4g + 74^\circ) \\ & +0.015 \sin (-2g + 66^\circ) & +0.057 \sin (3g' - 3g + 163.1^\circ) \\ & & +0.012 \sin (6g' - 5g + 165^\circ) \\ & +0.005 \sin (g' + 2g + 353^\circ) & +0.019 \sin (3g' - 4g + 351^\circ) \\ & & +0.003 \sin (6g' - 6g + 121^\circ) \\ & +0.104 \sin (g' + g + 8.8^\circ) & +0.006 \sin (4g' + g + 22^\circ) \\ & & +0.004 \sin (7g' - 2g + 337^\circ) \\ & +0.536 \sin (g' + 325.5^\circ) & +0.047 \sin (4g' - g + 329.6^\circ) \\ & & +0.005 \sin (7g' - 3g + 144^\circ) \\ & +0.126 \sin (g' - g + 208.0^\circ) & +0.144 \sin (4g' - 2g + 99.8^\circ) \\ & & +0.053 \sin (7g' - 4g + 44^\circ) \end{aligned}$$

$$\begin{aligned}
& +0''.265 \sin (g' - 2g + 193^\circ.2) + 0''.247 \sin (4g' - 3g + 22^\circ.1) \\
& \quad + 0.011 \sin (7g' - 5g + 135) \\
& + 0.012 \sin (g' - 3g + 204) + 0.021 \sin (4g' - 4g + 342) \\
& \quad + 0.004 \sin (7g' - 6g + 245) \\
& + 0.018 \sin (2g' + g + 283) + 0.009 \sin (4g' - 5g + 60) \\
& \quad + 0.002 \sin (7g' - 7g + 198) \\
& + 0.342 \sin (2g' + 265.9) + 0.009 \sin (5g' + 111) \\
& \quad + 0.009 \sin (8g' - 4g + 201) \\
& + 0.627 \sin (2g' - g + 43.15) + 0.185 \sin (5g' - g + 112.3) \\
& \quad + 0.008 \sin (8g' - 5g + 127) \\
& + 0.221 \sin (2g' - 2g + 114.7) + 0.194 \sin (5g' - 2g + 359.6) \\
& \quad + 0.004 \sin (8g' - 6g + 222) \\
& + 0.056 \sin (2g' - 3g + 267) + 0.187 \sin (5g' - 4g + 161.6) \\
& \quad + 0.004 \sin (9g' - 5g + 89) \\
& + 0.003 \sin (2g' - 4g + 282) + 0.008 \sin (5g' - 5g + 125) \\
& \quad + 0.003 \sin (9g' - 6g + 196) \\
& + 0.003 \sin (3g' + g + 33) + 0.003 \sin (5g' - 6g + 136) \\
& \quad + 0.002 \sin (9g' - 7g + 298) \\
& + 0.056 \sin (3g' + 49) + 0.007 \sin (6g' - 2g + 16) \\
& \quad + 0.003 \sin (10g' - 4g + 66) \\
& + 0.165 \sin (3g' - g + 356.1) + 0.037 \sin (6g' - 3g + 150) \\
& \quad + 0.073 \sin (10g' - 5g + 60.3),
\end{aligned}$$

in units of the 5th decimal of the second of arc,

$$\begin{aligned}
X_1 = & + 6 \sin (g' + g + 158^\circ) + 5 \sin (2g' - 3g + 57^\circ) \\
& \quad + 44 \sin (4g' - 3g + 109) \\
& + 83 \sin (g' + 54.3) + 2 \sin (2g' - 4g + 0) \\
& \quad + 2 \sin (4g' - 4g + 90) \\
& + 32 \sin (g' - g + 188.4) + 2 \sin (3g' + g + 225) \\
& \quad + 2 \sin (4g' - 5g + 135) \\
& + 51 \sin (g' - 2g + 103.4) + 3 \sin (3g' + 153) \\
& \quad + 2 \sin (5g' + 315) \\
& + 5 \sin (g' - 3g + 90) + 8 \sin (3g' - g + 38) \\
& \quad + 43 \sin (5g' - g + 8) \\
& + 5 \sin (2g' + g + 14) + 142 \sin (3g' - 2g + 212.4) \\
& \quad + 7 \sin (5g' - 2g + 288) \\
& + 24 \sin (2g' + 313) + 8 \sin (3g' - 3g + 218) \\
& \quad + 81 \sin (5g' - 3g + 354.9) \\
& + 97 \sin (2g' - g + 137.5) + 3 \sin (3g' - 4g + 153) \\
& \quad + 11 \sin (5g' - 4g + 238) \\
& + 69 \sin (2g' - 2g + 82.2) + 8 \sin (4g' - 2g + 188) \\
& \quad + 5 \sin (5g' - 5g + 104)
\end{aligned}$$

Table LXII contains the terms

$$2''.40 + X_0 + X_1 \Delta m.$$

Table LXIII contains the terms (to be multiplied by m),

$$0''.0040 + X_1.$$

From the expression for $\sin \beta_0$, on page 35, has been derived the value of β^0 expressed thus in powers of m :

$$\beta_0 = A_0 + A_1 m + A_2 m^2 + A_3 m^3.$$

The coefficients A_0 , A_1 , A_2 , and A_3 have been tabulated in Tables LXVII, LXIV, LXV, and LXVI. The argument in all is the Fundamental Argument.

The value of A_0 for Table LXVII has been computed by supposing i and \varnothing to vary. In this way it has been found that for equidistant values of the Fundamental Argument,

Fund. Arg.	Log $\sin i$ (in seconds).	$\pi - \varnothing$
0^d	3.6741596	$272^\circ 57' 22''.33$
960	3.6741116	$272 \ 57 \ 58 .02$
1920	3.6740636	$272 \ 58 \ 33 .71$
2880	3.6740157	$272 \ 59 \ 9 .39$
3840	3.6739677	$272 \ 59 \ 45 .08$
4800	3.6739197	$273 \ 0 \ 20 .77$

From the latitudes thus found has been subtracted $6''$, equal to the sum of the constants added in Tables LXI and LXII, for the purpose of rendering all the quantities positive.

The coefficients A_1 , A_2 , and A_3 have been computed in the following way. Writing $m + \Delta m$ for m , let the equation on page 35 be thus stated:

$$\sin \beta_0 = B_0 + B_1 (m + \Delta m) + B_2 (m + \Delta m)^2 + B_3 (m + \Delta m)^3$$

Then, if we put

$$\begin{aligned} C_1 &= B_1 + 2 B_2 \Delta m + 3 B_3 (\Delta m)^2 \\ C_2 &= B_2 + 3 B_3 \Delta m \\ C_3 &= B_3 \end{aligned}$$

this equation will take the form (m being now an integer),

$$\sin \beta_0 = \sin A_0 + C_1 m + C_2 m^2 + C_3 m^3.$$

But, by TAYLOR'S Theorem, in terms of the A we have

$$\begin{aligned} \sin \beta_0 &= \sin A_0 + [A_1 m + A_2 m^2 + A_3 m^3] \cos A_0 - \frac{1}{2} [A_1^2 m^2 + 2 A_1 A_2 m^3] \sin A_0 \\ &\quad - \frac{1}{6} A_1^3 m^3 \cos A_0. \end{aligned}$$

And, by a comparison of the two expressions,

$$\begin{aligned} A_1 &= C_1 \sec. A_0 \\ A_2 &= C_2 \sec. A_0 + \frac{1}{2} A_1^2 \tan A_0, \\ A_3 &= C_3 \sec. A_0 + A_1 A_2 \tan A_0 + \frac{1}{6} A_3. \end{aligned}$$

From A_1 , as given by the first of these equations, $0''.0040$ has been subtracted, in order to counterbalance the constant added in Table LXIII.

It must be borne in mind that the argument in the three tables LXIV, LXV, and LXVI is the Fundamental Argument and not Arg. I simply. Table LXVII also differs from Tables XXXVII and LX in this, that while in the latter should the argument surpass the period of Arg. I, this can always be subtracted from it and entry made in the table with the reduced value; this can not be done in Table LXVII unless we employ the same reduced value as the argument in Tables LXIV, LXV, and LXVI, and, at the same time, augment *algebraically* m by a unit *especially* for these three tables.

The heliocentric latitude of Jupiter referred to the ecliptic of date is then the sum of the seven quantities taken from tables LXI–LXVII, it being understood that those from Tables LXIII and LXIV are first multiplied by m , that from Table LXV by m^2 , and that from Table LXVI by m^3 .

Table LXVIII is a supplementary table for obtaining the orbit longitude from the ecliptic longitude. First, a sufficiently approximate longitude of the ascending node is given for the beginning of every twenty years from 1600 to 2000. Next, the value of the correction for the epoch 1850 and its variation in a 100 years are tabulated for every degree of the argument.

DIRECTIONS FOR THE USE OF THESE TABLES OF JUPITER.

The given date must be reduced to time of the Greenwich meridian, and expressed in mean solar days and decimals of a day. By means of Table III can be found the number of days which have elapsed since the beginning of the year. If the given date lies between 1750 and 1950, this number of days is added to each of the values of the twenty-two arguments standing in a line with the given year in Table I. Also from Table IV is obtained the motion of the angle $\pi + ht$ for the same number of days, and this is added to the value standing in a line with the given year in Table I. But if the given date lies without the limits 1750–1950, these additions are made to the values which in Table I belong to the correspondent year of the nineteenth century (1801 to 1900, inclusive), and the changes of the arguments for whole centuries are taken from Table II and also added to the preceding values. The letters J and G in the column of centuries in Table II denote severally the Julian and Gregorian calendars. It will be perceived that two lines are given for 1500; the upper must be used for the Julian calendar and the lower for the Gregorian. The column for Arg. II is vacant before 1500, as this argument is not used before 1550, the actual date in years being used instead. Args. XIX, XX, and XXI have no motions given during this period of time, as the inequalities they determine are too small to be worth consideration, regard being had to the rudeness of observations at this time, as well as to the imperfections of the theory.

From the arguments thus found we subtract as many multiples as possible of their periods given in Table VI, and add as many units *algebraically* to m as multiples of its period have been subtracted from Arg. I. It may be remarked that the only motive for subtracting the period is to bring the argument within the compass of the

tables where it is to be used. Hence, as some margin has always been allowed in the tables, it may not be necessary to subtract the period if the argument exceeds it only by a small quantity. However, in the case of Arg. I, if the period is not subtracted the unit must not be added to m .

We take from Table V with the argument m the values of the three vertical arguments A, B, and C of the tables to double entry. If m contains only one significant figure, the value is found directly in the middle portion of the table. But if m contain two or more figures, the change in the values for changes of multiples of 10 in m is given in the upper and lower portions of the table, negative multiples being in the upper and positive in the lower. Thus, if $m = -71$, we simply add the numbers corresponding to -70 to those corresponding to -1 . We subtract from the numbers thus obtained as many multiples of their periods given in Table VI as possible. In one table 5A is used as a vertical argument; after multiplying A by 5 we reject from the product as many multiples of 120 as possible.

We have now all the arguments necessary for getting the heliocentric position of Jupiter.

Tables VII–XXVII are entered severally with the Args. I–XXI, and the numbers obtained written in a vertical column for the purpose of being with other numbers added together. Tables XXVI and XXVII are arranged in a way which will be readily understood, to render interpolation unnecessary. Tables XXVIII, XXIX, and XXX are then entered with Arg. I as the horizontal argument, and severally with the vertical arguments A, B, and C, and the numbers obtained placed in the vertical column just mentioned. The quantities in the above tables are given in units of the *fourth* decimal place. The numbers in this column are now added and the sum divided by 3. It will be well to carry the quotient to 5 places of decimals.

Table XXXI is now entered with Arg. I and Table XXXII with Arg. I as the horizontal argument and A as the vertical argument, and Table XXXIII with the same horizontal argument but with the vertical argument 5A. Quantities in these three tables are given in units of the *sixth* decimal place. The three quantities thus obtained are added and the sum is multiplied by m (which is always a positive or negative integer), and the product placed under the quantity obtained through division by 3.

Table XXXIV is entered with Arg. I as the horizontal and A as the vertical argument, and Table XXXV with Arg. I; the two quantities thus obtained are added and the sum multiplied by m^2 (which is always a positive integer), and the product is placed with the former. Quantities in these two tables are given in units of the *eighth* decimal place.

Table XXXVI, which is given in units of the *ninth* decimal place, is entered with Arg. I, and the quantity obtained multiplied by m^3 ; the product is placed under the foregoing.

In fine, under these four quantities we write the value of Arg. I. The sum of the five is the value of the Fundamental Argument. With this we enter Table XXXVII. Interpolation in this table is facilitated by giving the common logarithm of the rate of motion of the quantity tabulated in seconds of arc and for a change of one day in the

argument. This rate belongs to the quantity which stands immediately to the left, and must not be supposed to be a fourth of the difference between two successive values. The characteristic of this logarithm is omitted; it is always 2. The arrangement of the table will be easily understood; the argument increases by 4 days as we move horizontally to the right. It is recommended that the interpolation should be made from the nearest value of the argument, so that the factor multiplying the rate of motion may never exceed 2, and the log daily motion should, of course, be interpolated for half the interval.

The value of $\pi + ht$ is added to the arc obtained from Table XXXVII, and the sum is the heliocentric longitude of Jupiter referred to the mean equinox and ecliptic of date.

Tables XXXVIII–LX are concerned with the common logarithm of the radius. Tables XXXVIII–LII must be entered severally with the arguments stated at the head of the argument column, and the quantities obtained written in a column for the purpose of being, together with others, added. In the case of Table XXXIX, it is to be noted that Arg. II in days is employed only for the period 1550–2150; for a date without this period the year is the argument, and the equation is given in units of the 5th decimal instead of the 7th. Tables LI and LII are so arranged that no interpolation is needed. Tables LIII, LIV, and LV are entered with Arg. I as the horizontal argument, and severally with A, B, and C as the vertical argument. The three quantities thus obtained are placed in the column with those just got. This column of numbers is now added and the sum divided by 3. The numbers being in units of the 7th decimal of the logarithm of the radius, for the sake of greater accuracy, it is recommended that the quotient be set down with an additional decimal.

Table LVI is now entered with Arg. I and Table LVII with this argument as the horizontal and A as the vertical argument. The sum of the two quantities thus obtained is multiplied by m and the product set under the quantity obtained through division by 3.

Table LVIII is entered with Arg. I and Table LIX with this argument as the horizontal and A as the vertical argument. The sum of the two quantities thus obtained is multiplied by m^2 , and the product placed under the foregoing.

In fine, Table LX is entered with the *Fundamental Argument* and the quantity obtained placed in the same column. The arrangement of this table is the same as that of Table XXXVII, except that here the rate of motion for the change of one day in the argument is given instead of its logarithm.

The sum of the four quantities in the mentioned column is the common logarithm of the radius of Jupiter.

Tables LXI–LXVII are concerned with the heliocentric latitude of Jupiter.

Table LXI is entered with Arg. XXII, Table LXII with Arg. I as the horizontal and A as the vertical argument. Table LXIII is entered with Arg. I as the horizontal and A as the vertical argument. Table LXIV is entered with the *Fundamental Argument* and the quantity obtained added to the preceding, and the sum is multiplied by m . The product is placed with the quantities obtained from Tables LXI and LXII. Tables LXV and LXVI are entered with the *Fundamental Argument*, and the quanti-

ties obtained multiplied severally by m^2 and m^3 . The products are placed with the former. In fine, Table LXVII is entered with the *Fundamental Argument*, and the quantity obtained is placed in the same column. The arrangement of this table is in all respects the same as that of Table LX.

The sum of the five quantities in this column is the heliocentric latitude of Jupiter referred to the ecliptic of date.

This completes the derivation of the position of Jupiter. But if the orbit longitude of the planet is wanted, Table LXVIII furnishes the means of obtaining it. In the first part of this table is found for the beginning of every twentieth year from 1600 to 2000 the longitude of the ascending node counted from the mean equinox of date. By subtracting the arc, obtained from this table with the date as argument, from the elliptic longitude, is obtained the argument proper for finding the correction, which must be added to the elliptic longitude in order to obtain the orbit longitude. The value got from the column to the left is that which would avail were the epoch 1850. For any other time this value must be corrected by means of the variation in a century, which is given in a column to the right. Care must be taken to read the signs of these two quantities on the same side as the argument.

NOTE 1.—The exigencies of printing have not permitted generally the indication of the decimal value of the figures tabulated in the tables. But in all cases equations which are to be added are tabulated to the same number of decimals. The only exceptions are in Tables VIII and XXXIX, where for dates extraneous to the period 1550–2150 it has been thought sufficient to give two decimals less than for dates within this period. It is recommended that when a position of Jupiter is computed for a date without the mentioned period two decimals should be cut off from the equations obtained from the other tables; that is, be content with seconds instead of hundredths of a second.

NOTE 2.—In making the multiplication by m , m^2 , and m^3 , regard must be had to the signs of both factors. The multiplication is *algebraical*.

First Example:—Calculation of the Position of Jupiter for 1894, March 6, Greenwich mean noon.

Decl. of Arg.	Value of Arg.	Table.	Fund. Arg.	Table.	Log. Radius.	Table.	Latitude.
I	58° 04' 61.883	VII	568	XXXVIII	257		
II	125° 16	VIII	21.6578	XXXIX	1118		
III	1629 .08	IX	4.8892	XL	8257		
IV	2968 .67	X	1.2727	XLI	183		
V	16136 .0	XI	1.9752	XLII	521		
VI	5197 .9	XII	5994	XLIII	4462		
VII	545 .6	XIII	283	XLIV	882		
VIII	16136	XIV	649	XLV	337		
IX	5369	XV	44	XLVI	343		
X	870	XVI	758	XLVII	138		
XI	1473	XVII	487	XLVIII	279		
XII	340	XVIII	461	XLIX	349		
XIII	2572	XIX	346				
XIV	687	XX	208				
XV	1047	XXI	69				
XVI	3324	XXII	169				
XVII	4638	XXIII	69				
XVIII	401	XXIV	13				
XIX	3235	XXV	96				
XX	21	XXVI	16				
XXI	181	XXVII	32				
XXII	2961						
$m = 4 \begin{cases} A = 28.40 \\ B = 7.11 \\ C = 2.5 \\ 5A = 22.0 \end{cases}$							
<i>Details of Interpolation in Tables XXVII, LX, LXVII.</i> Log (—1.08344) 0.03481 _n Log Mot. in XXXVII 2.50192 Log Mot. in LX 2.4017 Log Mot. in LXVII 0.7827							
Prop. part. Log. XXXVII — 5' 44".14 2.53673 _n LX + 273 2.4365 LXVII — 6".57 0.8175 _n							
<i>Quan. from tables with Arg. = 59°.</i> XXXVII 53° 32' 57".53 LX 0.7022206 LXVII — 0° 43' 32".01							
XXXXI + .000507 XXXII 514 XXXIII 457 + .001478 X 4 = +.00591 XXXIV 202 XXXV 668 + .00000870 X 16 = +.00014 XXXVI + .00000090 X 64 = +.00001 Arg. I = 580.61883 Fund. Argument = 590.91656							
XXXVIII 214 XXXIX 279 XXX 46 3) 30.8750 10.29167 LXVI — 131.53 LVII 2.48 — 129.05 X 4 = — 516.2 LVIII — 0.0476 LIX 26 — 0.0450 X 16 = — 0.7 LX Log. Radius = 0.7022749 Orbit Longitude.							
Long. Asc. Node = 99° 23'.1 Correction for 1850 = — 24".85 Orbit Longitude = 65° 58' 15".95 Arg. of Table LXVIII = 326° 35'.6 Sec. Var. = + 0".09							
LXIV + 4".3708 LXIII — 55 + 4.3653 X 4 = + 17.46 LXV — 0".00123 X 16 = — 0.02 LXVI — 0".000006 X 64 = 0.00 LXVII — 0° 43' 38.58 Hel. Lat. = — 0° 43' 16.14							
LXI 2".88 LXII 2.12							

Second Example.—Calculation of the Position of Jupiter for 1007, October 31.153, Greenwich mean time.

Desig. of Arg.	Value of Arg.	Table.	Fund. Ar.	Table.	Log. Radius.	Table.	Latitude.
I	1798 ^d .869	VII	6	XXXVIII	1		
II	1007 ^j .8	VIII	19.04	XXXIX	13		
III	431 ^{od}	IX	2.43	XL	33		
IV	4037	X	3.18	XLI	38		
V	3795	XI	1.69	XLII	27		
VI	4146	XII	1.47	XLIII	38		
VII	1100	XIII	4	XLIV	3		
VIII	5224	XIV	22	XLV	1		
IX	4653	XV	3	XLVI	5		
X	2083	XVI	0	XLVII	2		
XI	333	XVII	4	XLVIII	1		
XII	430	XVIII	4	XLIX	4		
XIII	1664	XIX	1				
XIV	1395	XX	3				
XV	905	XXI	0				
XVI	4163	XXII	1				
XVII	2852	XXIII	1				
XVIII	813	XXIV	0				
XXII	4219	XXV-XXVII	1				
$m = -71 \left\{ \begin{array}{l} A = 4.22 \\ B = 31.76 \\ C = 24.1 \\ 5A = 21.1 \end{array} \right.$							
		XXVIII	2	LIII	2	LXI	7"
		XXIX	2	LIV	1	LXII	4
		XXX	1	LV	0		
			3) 28.36		3) 169		
			9.453		56		
		XXXI	+0.38003	LVI	+24.08	LXIV	-0".6280
		XXXII	243	LVII	2.40	LXIII	47
		XXXIII	43				
			+0.38289 X -71 = -2.719		+26.48 X -71 = -19		-0.6233 X -71 = 44
		XXXIV	244	LVIII	-.0883	LXV	-".00207 X (-71) ² = -10
		XXXV	5446	LIX	35	LXVI	+ .000010 X (-71) ³ = 0
			+0.0005690 X (-71) ² = +0.287		-.0848 X (-71) ² = -4		
		XXXVI	+0.00000088 X (-71) ³ = -0.032				
		Arg. I	1798.869	LX	0.73353	LXVII	+1° 11' 36"
		Fund. Arg. =	1805.858	Log. Radius =	0.73386	Hel. Lat.	= +1 12 21
		XXXVII	152° 40' 3"				
		$\pi + h t$	0 8 57				
		Hel. Long.	= 152 49 0				

TABLES OF JUPITER.

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TABLE I.—*Values of the Arguments for the Greenwich mean noon of Jan. 0*

Year.	<i>m.</i>	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.
		d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
1750	— 9	4244. 26218	73156	6996. 76	2978. 00	7959. 6	1759. 4	892. 9	5184	6544	550
1751	— 8	276. 67423	73521	108. 30	3343. 00	8324. 6	2124. 4	1257. 9	5549	6909	915
1752 B	— 8	642. 67423	73887	474. 30	3709. 00	8690. 6	2490. 4	1623. 9	5915	7275	1281
1753	— 8	1007. 67423	74252	839. 30	4074. 00	9055. 6	2855. 4	1988. 9	6280	7640	1646
1754	— 8	1372. 67423	74617	1204. 30	49. 89	9420. 6	3220. 4	2353. 9	6645	8005	2011
1755	— 8	1737. 67423	74982	1569. 30	414. 89	9785. 6	3585. 4	2718. 9	7010	8370	195
1756 B	— 8	2103. 67423	75348	1935. 30	780. 89	10151. 6	3951. 4	3084. 9	7376	8736	561
1757	— 8	2468. 67423	75713	2300. 30	1145. 89	10516. 6	4316. 4	331. 8	7741	9101	926
1758	— 8	2833. 67423	76078	2665. 30	1510. 89	10881. 6	4681. 4	696. 8	8106	9466	1291
1759	— 8	3198. 67423	76443	3030. 30	1875. 89	11246. 6	5046. 4	1061. 8	8471	9831	1656
1760 B	— 8	3564. 67423	76809	3396. 30	2241. 89	11612. 6	5412. 4	1427. 8	8837	10197	2022
1761	— 8	3929. 67423	77174	3761. 30	2606. 89	11977. 6	308. 3	1792. 8	9202	10562	206
1762	— 8	4294. 67423	77539	4126. 30	2971. 89	12342. 6	673. 3	2157. 8	9567	160	571
1763	— 7	327. 08628	77904	4491. 30	3336. 89	12707. 6	1038. 3	2522. 8	9932	525	936
1764 B	— 7	693. 08628	78270	4857. 30	3702. 89	13073. 6	1404. 3	2888. 8	10298	891	1302
1765	— 7	1058. 08628	78635	5222. 30	4067. 89	13438. 6	1769. 3	135. 7	10663	1256	1667
1766	— 7	1423. 08628	79000	5587. 30	43. 78	13803. 6	2134. 3	500. 7	11028	1621	2032
1767	— 7	1788. 08628	79365	5952. 30	408. 78	14168. 6	2499. 3	865. 7	11393	1986	216
1768 B	— 7	2154. 08628	79731	6318. 30	774. 78	14534. 6	2865. 3	1231. 7	11759	2352	582
1769	— 7	2519. 08628	80096	6683. 30	1139. 78	14899. 6	3230. 3	1596. 7	12124	2717	947
1770	— 7	2884. 08628	80461	7048. 30	1504. 78	15264. 6	3595. 3	1961. 7	12489	3082	1312
1771	— 7	3249. 08628	80826	159. 84	1869. 78	15629. 6	3960. 3	2326. 7	12854	3447	1677
1772 B	— 7	3615. 08628	81192	525. 84	2235. 78	15995. 6	4326. 3	2692. 7	13220	3813	2043
1773	— 7	3980. 08628	81557	890. 84	2600. 78	16360. 6	4691. 3	3057. 7	13585	4178	227
1774	— 6	12. 49833	81922	1255. 84	2965. 78	16725. 6	5056. 3	304. 7	13950	4543	592
1775	— 6	377. 49833	82287	1620. 84	3330. 78	17090. 6	5421. 3	669. 7	14315	4908	957
1776 B	— 6	743. 49833	82653	1986. 84	3696. 78	17456. 6	318. 3	1035. 7	14681	5274	1323
1777	— 6	1108. 49833	83018	2351. 84	4061. 78	17821. 6	683. 3	1400. 7	15046	5639	1688
1778	— 6	1473. 49833	83383	2716. 84	37. 67	18186. 6	1048. 3	1765. 7	15411	6004	2053
1779	— 6	1838. 49833	83748	3081. 84	402. 67	18551. 6	1413. 3	2130. 7	15776	6369	238
1780 B	— 6	2204. 49833	84114	3447. 84	768. 67	18917. 6	1779. 3	2496. 7	16142	6735	604
1781	— 6	2569. 49833	84479	3812. 84	1133. 67	19282. 6	2144. 3	2861. 7	16507	7100	969
1782	— 6	2934. 49833	84844	4177. 84	1498. 67	19647. 6	2509. 3	108. 6	16872	7465	1334
1783	— 6	3299. 49833	85209	4542. 84	1863. 67	20012. 6	2874. 3	473. 6	17237	7830	1699
1784 B	— 6	3665. 49833	85575	4908. 84	2229. 67	20378. 6	3240. 3	839. 6	17603	8196	2065
1785	— 6	4030. 49833	85940	5273. 84	2594. 67	20743. 6	3605. 3	1204. 6	17968	8561	249
1786	— 5	62. 91038	86305	5638. 84	2959. 67	21108. 6	3970. 3	1569. 6	18333	8926	614
1787	— 5	427. 91038	86670	6003. 84	3324. 67	21473. 6	4335. 3	1934. 6	18698	9291	979
1788 B	— 5	793. 91038	87036	6369. 84	3690. 67	21839. 6	4701. 3	2300. 6	19064	9657	1345
1789	— 5	1158. 91038	87401	6734. 84	4055. 67	22204. 6	5066. 3	2665. 6	19429	10022	1710
1790	— 5	1523. 91038	87766	7099. 84	31. 56	327. 8	5431. 3	3030. 6	19794	10387	2075
1791	— 5	1888. 91038	88131	211. 38	396. 56	692. 8	327. 2	277. 5	20159	10752	259
1792 B	— 5	2254. 91038	88497	577. 38	762. 56	1058. 8	693. 2	643. 5	20525	351	625
1793	— 5	2619. 91038	88862	942. 38	1127. 56	1423. 8	1058. 2	1008. 5	36	716	990
1794	— 5	2984. 91038	89227	1307. 38	1492. 56	1788. 8	1423. 2	1373. 5	401	1081	1355
1795	— 5	3349. 91038	89592	1672. 38	1857. 56	2153. 8	1788. 2	1738. 5	766	1446	1720
1796 B	— 5	3715. 91038	89958	2038. 38	2223. 56	2519. 8	2154. 2	2104. 5	1132	1812	2086
1797	— 5	4080. 91038	90323	2403. 38	2588. 56	2884. 8	2519. 2	2469. 5	1497	2177	270
1798	— 4	113. 32243	90688	2768. 38	2953. 56	3249. 8	2884. 2	2834. 5	1862	2542	635
1799	— 4	478. 32243	91053	3133. 38	3318. 56	3614. 8	3249. 2	81. 4	2227	2907	1000

(Jan. 1 in Bissextile years) of each year during the period 1750-1950.

XI.	XII.	XIII.	XIV.	XV.	XVI.	XVII.	XVIII.	XIX.	XX.	XXI.	XXII.	$\pi + \text{lt.}$	Year.
d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	° / "	
134	991	1454	554	361	1911	9467	1240	2173	210	173	3001	10 30 40.39	1750
499	1356	1819	919	726	2276	9832	1605	2538	101	139	3366	10 31 30.62	1751
865	1722	2185	1285	1092	2642	10198	1971	2904	230	107	3732	10 32 20.98	1752 B
1230	113	2550	1650	1457	3007	10563	2336	3269	121	73	4097	10 33 11.22	1753
1595	478	203	2015	146	3372	10928	2701	3634	12	39	70	10 34 1.45	1754
1960	843	568	2380	511	3737	11293	3066	3999	140	5	435	10 34 51.68	1755
2326	1209	934	2746	877	4103	162	285	65	32	371	801	10 35 42.04	1756 B
2691	1574	1299	21	1242	198	527	650	430	160	337	1166	10 36 32.27	1757
3056	1939	1604	386	1607	563	892	1015	795	51	303	1531	10 37 22.50	1758
3421	329	2029	751	295	928	1257	1380	1160	179	269	1896	10 38 12.73	1759
121	695	2395	1117	661	1294	1623	1746	1526	71	236	2262	10 39 3.10	1760 B
486	1060	47	1482	1026	1659	1988	2111	1891	199	202	2627	10 39 53.33	1761
851	1425	412	1847	1391	2024	2353	2476	2256	90	169	2992	10 40 43.56	1762
1216	1790	777	2212	79	2389	2718	2841	2621	218	135	3357	10 41 33.79	1763
1582	182	1143	2578	445	2755	3084	60	2987	110	102	3723	10 42 24.16	1764 B
1947	547	1508	2943	810	3120	3449	425	3352	1	68	4088	10 43 14.39	1765
2312	912	1873	219	1175	3485	3814	790	3717	129	34	62	10 44 4.62	1766
2677	1277	2238	584	1540	3850	4179	1155	4082	20	0	427	10 44 54.85	1767
3043	1643	2604	950	230	4216	4545	1521	148	149	366	793	10 45 45.22	1768 B
3408	33	256	1315	595	310	4910	1886	513	40	332	1158	10 46 35.45	1769
107	398	621	1680	960	675	5275	2251	878	168	298	1523	10 47 25.68	1770
472	763	986	2045	1325	1040	5640	2616	1243	59	265	1888	10 48 15.91	1771
838	1129	1352	2411	14	1406	6006	2982	1609	188	232	2254	10 49 6.28	1772 B
1203	1494	1717	2776	379	1771	6371	200	1974	79	198	2619	10 49 56.51	1773
1568	1859	2082	51	744	2136	6736	565	2339	207	164	2984	10 50 46.74	1774
1933	250	2447	416	1109	2501	7101	930	2704	98	130	3349	10 51 36.97	1775
2299	616	100	782	1475	2867	7467	1296	3070	227	97	3715	10 52 27.34	1776 B
2664	981	465	1147	164	3232	7832	1661	3435	118	63	4080	10 53 17.57	1777
3029	1346	830	1512	529	3597	8197	2026	3800	9	29	53	10 54 7.80	1778
3394	1711	1195	1877	894	3962	8562	2391	4165	137	394	418	10 54 58.03	1779
94	102	1561	2243	1260	58	8928	2757	232	29	361	784	10 55 48.40	1780 B
459	467	1926	2608	1625	423	9293	3122	597	157	328	1149	10 56 38.63	1781
824	832	2291	2973	313	788	9658	340	962	48	294	1514	10 57 28.86	1782
1189	1197	2656	248	678	1153	10023	705	1327	176	260	1879	10 58 19.09	1783
1555	1563	310	614	1044	1519	10389	1071	1693	68	227	2245	10 59 9.46	1784 B
1920	1928	675	979	1409	1884	10754	1436	2058	196	193	2610	10 59 59.69	1785
2285	319	1040	1344	97	2249	11119	1801	2423	87	159	2975	11 0 49.92	1786
2650	684	1405	1709	462	2614	11484	2166	2788	215	125	3340	11 1 40.15	1787
3016	1050	1771	2075	828	2980	352	2532	3154	107	92	3706	11 2 30.51	1788 B
3381	1415	2136	2440	1193	3345	717	2897	3519	235	59	4071	11 3 20.74	1789
81	1780	2501	2805	1558	3710	1082	115	3884	126	25	44	11 4 10.98	1790
446	170	153	80	247	4075	1447	480	4249	17	390	409	11 5 1.21	1791
812	536	519	446	613	170	1813	846	315	146	357	775	11 5 51.57	1792 B
1177	901	884	811	978	535	2178	1211	680	37	323	1140	11 6 41.80	1793
1542	1266	1249	1176	1343	900	2543	1576	1045	165	289	1505	11 7 32.03	1794
1907	1631	1614	1541	31	1265	2908	1941	1410	56	255	1870	11 8 22.26	1795
2273	23	1980	1907	397	1631	3274	2307	1776	185	222	2236	11 9 12.63	1796 B
2638	388	2345	2272	762	1996	3639	2672	2141	76	188	2601	11 10 2.86	1797
3003	753	2710	2637	1127	2361	4004	3037	256	204	154	2966	11 10 53.09	1798
3368	1118	362	3002	1492	2726	4369	255	2871	95	121	3331	11 11 43.32	1799

TABLE I.—*Values of the Arguments for the Greenwich mean noon of Jan. 0,*

Year.	m.	I.	II	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.
		d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
1800	— 4	843. 32243	91418	3498. 38	3683. 56	3979. 8	3614. 2	446. 4	2592.	3272	1365
1801	— 4	1208. 32243	91783	3863. 38	4048. 56	4344. 8	3979. 2	811. 4	2957.	3637	1730
1802	— 4	1573. 32243	92148	4228. 38	24. 44	4709. 8	4344. 2	1176. 4	3322.	4002	2095
1803	— 4	1938. 32243	92513	4593. 38	389. 44	5074. 8	4709. 2	1541. 4	3687.	4367	279
1804 B	— 4	2304. 32243	92879	4959. 38	755. 44	5440. 8	5075. 2	1907. 4	4053.	4733	645
1805	— 4	2669. 32243	93244	5324. 38	1120. 44	5805. 8	5440. 2	2272. 4	4418.	5098	1010
1806	— 4	3034. 32243	93609	5689. 38	1485. 44	6170. 8	336. 2	2637. 4	4783.	5463	1375
1807	— 4	3399. 32243	93974	6054. 38	1850. 44	6535. 8	701. 2	3002. 4	5148.	5828	1740
1808 B	— 4	3765. 32243	94340	6420. 38	2216. 44	6901. 8	1067. 2	250. 4	5514.	6194	2106
1809	— 4	4130. 32243	94705	6785. 38	2581. 44	7266. 8	1432. 2	615. 4	5879.	6559	291
1810	— 3	162. 73448	95070	7150. 38	2946. 44	7631. 8	1797. 2	980. 4	6244.	6924	656
1811	— 3	527. 73448	95435	261. 92	3311. 44	7996. 8	2162. 2	1345. 4	6609.	7289	1021
1812 B	— 3	893. 73448	95801	627. 92	3677. 44	8362. 8	2528. 2	1711. 4	6975.	7655	1387
1813	— 3	1258. 73448	96166	992. 92	4042. 44	8727. 8	2893. 2	2076. 4	7340.	8020	1752
1814	— 3	1623. 73448	96531	1357. 92	18. 33	9092. 8	3258. 2	2441. 4	7705.	8385	2117
1815	— 3	1988. 73448	96896	1722. 92	383. 33	9457. 8	3623. 2	2806. 4	8070.	8750	301
1816 B	— 3	2354. 73448	97262	2088. 92	749. 33	9823. 8	3989. 2	54. 3	8436.	9116	667
1817	— 3	2719. 73448	97627	2453. 92	1114. 33	10188. 8	4354. 2	419. 3	8801.	9481	1032
1818	— 3	3084. 73448	97992	2818. 92	1479. 33	10553. 8	4719. 2	784. 3	9166.	9846	1397
1819	— 3	3449. 73448	98357	3183. 92	1844. 33	10918. 8	5084. 2	1149. 3	9531.	10211	1762
1820 B	— 3	3815. 73448	98723	3549. 92	2210. 33	11284. 8	5450. 2	1515. 3	9897.	10577	2128
1821	— 3	4180. 73448	99088	3914. 92	2575. 33	11649. 8	346. 1	1880. 3	10262.	175	312
1822	— 2	213. 14653	99453	4279. 92	2940. 33	12014. 8	711. 1	2245. 3	10627.	540	677
1823	— 2	578. 14653	99818	4644. 92	3305. 33	12379. 8	1076. 1	2610. 3	10992.	905	1042
1824 B	— 2	944. 14653	100184	5010. 92	3671. 33	12745. 8	1442. 1	2976. 3	11358.	1271	1408
1825	— 2	1309. 14653	100549	5375. 92	4036. 33	13110. 8	1807. 1	223. 2	11723.	1636	1773
1826	— 2	1674. 14653	100914	5740. 92	12. 22	13475. 8	2172. 1	588. 2	12088.	2001	2138
1827	— 2	2039. 14653	101279	6105. 92	377. 22	13840. 8	2537. 1	953. 2	12453.	2366	322
1828 B	— 2	2405. 14653	101645	6471. 92	743. 22	14206. 8	2903. 1	1319. 2	12819.	2732	688
1829	— 2	2770. 14653	102010	6836. 92	1108. 22	14571. 8	3268. 1	1684. 2	13184.	3097	1053
1830	— 2	3135. 14653	102375	7201. 92	1473. 22	14936. 8	3633. 1	2049. 2	13549.	3462	1418
1831	— 2	3500. 14653	102740	313. 46	1838. 22	15301. 8	3998. 1	2414. 2	13914.	3827	1783
1832 B	— 2	3866. 14653	103106	679. 46	2204. 22	15667. 8	4364. 1	2780. 2	14280.	4193	2149
1833	— 2	4231. 14653	103471	1044. 46	2569. 22	16032. 8	4729. 1	27. 1	14645.	4558	333
1834	— 1	263. 55858	103836	1409. 46	2934. 22	16397. 8	5094. 1	392. 1	15010.	4923	698
1835	— 1	628. 55858	104201	1774. 46	3299. 22	16762. 8	5459. 1	757. 1	15375.	5288	1063
1836 B	— 1	994. 55858	104567	2140. 46	3665. 22	17128. 8	356. 1	1123. 1	15741.	5654	1429
1837	— 1	1359. 55858	104932	2505. 46	4030. 22	17493. 8	721. 1	1488. 1	16106.	6019	1794
1838	— 1	1724. 55858	105297	2870. 46	6. 11	17858. 8	1086. 1	1853. 1	16471.	6384	2159
1839	— 1	2089. 55858	105662	3235. 46	371. 11	18223. 8	1451. 1	2218. 1	16836.	6749	344
1840 B	— 1	2455. 55858	106028	3601. 46	737. 11	18589. 8	1817. 1	2584. 1	17202.	7115	710
1841	— 1	2820. 55858	106393	3966. 46	1102. 11	18954. 8	2182. 1	2949. 1	17567.	7480	1075
1842	— 1	3185. 55858	106758	4331. 46	1467. 11	19319. 8	2547. 1	196. 1	17932.	7845	1440
1843	— 1	3550. 55858	107123	4696. 46	1832. 11	19684. 8	2912. 1	561. 1	18297.	8210	1805
1844 B	— 1	3916. 55858	107489	5062. 46	2198. 11	20050. 8	3278. 1	927. 1	18663.	8576	2171
1845	— 1	4281. 55858	107854	5427. 46	2563. 11	20415. 8	3643. 1	1292. 1	19028.	8941	355
1846	0	313. 97063	108219	5792. 46	2928. 11	20780. 8	4008. 1	1657. 1	19393.	9306	720
1847	0	678. 97063	108584	6157. 46	3293. 11	21145. 8	4373. 1	2022. 1	19758.	9671	1085
1848 B	0	1044. 97063	108950	6523. 46	3659. 11	21511. 8	4739. 1	2388. 1	20124.	10037	1451
1849	0	1409. 97063	109315	6888. 46	4024. 11	21876. 8	5104. 1	2753. 1	20489.	10402	1816

(Jan. 1 in Bissextile years) of each year during the period 1750–1950.

XI.	XII.	XIII.	XIV.	XV.	XVI.	XVII.	XVIII.	XIX.	XX.	XXI.	XXII.	$\pi + ht.$	Year.
d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	° / "	
67	1483	727	277	181	3091	4734	620	3236	223	87	3696	11 12 33.55	1800
432	1848	1092	642	546	3456	5099	985	3601	114	53	4061	11 13 23.78	1801
797	238	1457	1007	911	3821	5464	1350	3966	5	19	35	11 14 14.01	1802
1162	603	1822	1372	1276	4186	5829	1715	31	133	384	400	11 15 4.24	1803
1528	969	2188	1738	1642	281	6195	2081	397	25	351	766	11 15 54.61	1804 B
1893	1334	2553	2103	330	646	6560	2446	762	153	317	1131	11 16 44.84	1805
2258	1699	206	2468	695	1011	6925	2811	1127	44	283	1496	11 17 35.07	1806
2623	90	571	2833	1060	1376	7290	29	1492	172	249	1861	11 18 25.30	1807
2989	456	937	109	1426	1742	7056	395	1858	64	216	2227	11 19 15.67	1808 B
3354	821	1302	474	114	2107	8021	760	2223	192	183	2592	11 20 5.90	1809
53	1186	1667	839	479	2472	8386	1125	2588	83	149	2957	11 20 56.13	1810
418	1551	2032	1204	844	2837	8751	1490	2953	212	115	3322	11 21 46.36	1811
784	1917	2398	1570	1210	3203	9117	1856	3319	104	82	3688	11 22 36.73	1812 B
1149	307	50	1935	1575	3568	9482	2221	3684	232	48	4053	11 23 26.96	1813
1514	672	415	2300	264	3933	9847	2586	4049	123	14	26	11 24 17.19	1814
1879	1037	780	2665	629	28	10212	2951	115	14	379	391	11 25 7.42	1815
2245	1403	1146	3031	995	394	10578	170	481	143	346	757	11 25 57.79	1816 B
2610	1768	1511	306	1360	759	10943	535	846	34	312	1122	11 26 48.02	1817
2975	159	1876	671	48	1124	11308	900	1211	162	279	1487	11 27 38.25	1818
3340	524	2241	1036	413	1489	175	1265	1576	53	245	1852	11 28 28.48	1819
40	890	2607	1402	779	1855	541	1631	1942	182	212	2218	11 29 18.85	1820 B
405	1255	259	1767	1144	2220	906	1996	2307	73	178	2583	11 30 9.08	1821
770	1620	624	2132	1509	2585	1271	2361	2672	201	144	2948	11 30 59.31	1822
1135	10	989	2497	198	2950	1636	2726	3037	92	110	3313	11 31 49.54	1823
1501	376	1355	2863	564	3316	2002	3092	3403	221	77	3679	11 32 39.91	1824 B
1866	741	1720	139	929	3681	2367	310	3768	112	43	4044	11 33 30.14	1825
2231	1106	2085	504	1294	4046	2732	675	4133	3	9	17	11 34 20.37	1826
2596	1471	2450	869	1659	140	3097	1040	198	131	374	382	11 35 10.60	1827
2962	1837	103	1235	348	506	3463	1406	564	23	342	748	11 36 0.97	1828 B
3327	228	468	1600	713	871	3828	1771	929	151	308	1113	11 36 51.20	1829
27	593	833	1965	1078	1236	4193	2136	1294	42	274	1478	11 37 41.43	1830
392	958	1198	2330	1443	1601	4558	2501	1659	170	240	1843	11 38 31.66	1831
758	1324	1564	2696	132	1967	4924	2867	2025	62	207	2209	11 39 22.02	1832 B
1123	1689	1929	3061	497	2332	5289	85	2390	190	173	2574	11 40 12.25	1833
1488	79	2294	336	862	2697	5654	450	2755	81	139	2939	11 41 2.48	1834
1853	444	2659	701	1227	3062	6019	815	3120	209	105	3304	11 41 52.71	1835
2219	810	313	1067	1593	3428	6385	1181	3486	100	72	3670	11 42 43.08	1836 B
2584	1175	678	1432	282	3793	6750	1546	3851	228	39	4035	11 43 33.31	1837
2949	1540	1043	1797	647	4158	7115	1911	4216	119	5	9	11 44 23.54	1838
3314	1905	1408	2162	1012	253	7480	2276	282	10	370	374	11 45 13.77	1839
14	297	1774	2528	1378	619	7846	2642	648	139	337	740	11 46 4.14	1840 B
379	662	2139	2893	66	984	8211	3007	1013	30	303	1105	11 46 54.37	1841
744	1027	2504	168	431	1349	8576	225	1378	158	269	1470	11 47 44.60	1842
1109	1392	156	533	796	1714	8941	590	1743	49	235	1835	11 48 34.83	1843
1475	1758	522	899	1162	2080	9307	956	2109	178	202	2201	11 49 25.20	1844 B
1840	148	887	1264	1527	2445	9672	1321	2474	69	168	2566	11 50 15.43	1845
2205	513	1252	1629	216	2810	10037	1686	2839	197	135	2931	11 51 5.66	1846
2570	878	1617	1994	581	3175	10402	2051	3204	88	101	3296	11 51 55.89	1847
2936	1244	1983	2360	947	3541	10768	2417	3570	217	68	3662	11 52 46.26	1848 B
3301	1609	2348	2725	1312	3906	11133	2782	3935	109	34	4027	11 53 36.49	1849

TABLE I.—*Values of the Arguments for the Greenwich mean noon of Jan. 0*

Year	<i>m.</i>	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.
		d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
1850	0	1774. 97063	109680	0. 00	0. 00	0. 0	0. 0	0. 0	0	0	0
1851	0	2139. 97063	110045	365. 00	365. 00	365. 0	365. 0	365. 0	365	365	365
1852 B	0	2505. 97063	110411	731. 00	731. 00	731. 0	731. 0	731. 0	731	731	731
1853	0	2870. 97063	110776	1096. 00	1096. 00	1096. 0	1096. 0	1096. 0	1096	1096	1096
1854	0	3235. 97063	111141	1461. 00	1461. 00	1461. 0	1461. 0	1461. 0	1461	1461	1461
1855	0	3600. 97063	111506	1826. 00	1826. 00	1826. 0	1826. 0	1826. 0	1826	1826	1826
1856 B	0	3966. 97063	111872	2192. 00	2192. 00	2192. 0	2192. 0	2192. 0	2192	2192	11
1857	0	4331. 97063	112237	2557. 00	2557. 00	2557. 0	2557. 0	2557. 0	2557	2557	376
1858	I	364. 38268	112602	2922. 00	2922. 00	2922. 0	2922. 0	2922. 0	2922	2922	741
1859	I	729. 38268	112967	3287. 00	3287. 00	3287. 0	3287. 0	168. 9	3287	3287	1106
1860 B	I	1095. 38268	113333	3653. 00	3653. 00	3653. 0	3653. 0	534. 9	3653	3653	1472
1861	I	1460. 38268	113698	4018. 00	4018. 00	4018. 0	4018. 0	899. 9	4018	4018	1837
1862	I	1825. 38268	114063	4383. 00	4383. 00	4383. 0	4383. 0	1264. 9	4383	4383	21
1863	I	2190. 38268	114428	4748. 00	4748. 00	4748. 0	4748. 0	1629. 9	4748	4748	386
1864 B	I	2556. 38268	114794	5114. 00	724. 89	5114. 0	5114. 0	1995. 9	5114	5114	752
1865	I	2921. 38268	115159	5479. 00	1089. 89	5479. 0	9. 9	2360. 9	5479	5479	1117
1866	I	3286. 38268	115524	5844. 00	1454. 89	5844. 0	374. 9	2725. 9	5844	5844	1482
1867	I	3651. 38268	115889	6209. 00	1819. 89	6209. 0	739. 9	3090. 9	6209	6209	1847
1868 B	I	4017. 38268	116255	6575. 00	2185. 89	6575. 0	1105. 9	338. 9	6575	6575	33
1869	2	49. 79473	116620	6940. 00	2550. 89	6940. 0	1470. 9	703. 9	6940	6940	398
1870	2	414. 79473	116985	51. 54	2915. 89	7305. 0	1835. 9	1068. 9	7305	7305	763
1871	2	779. 79473	117350	416. 54	3280. 89	7670. 0	2200. 9	1433. 9	7670	7670	1128
1872 B	2	1145. 79473	117716	782. 54	3646. 89	8036. 0	2566. 9	1799. 9	8036	8036	1494
1873	2	1510. 79473	118081	1147. 54	4011. 89	8401. 0	2931. 9	2164. 9	8401	8401	1859
1874	2	1875. 79473	118446	1512. 54	4376. 89	8766. 0	3296. 9	2529. 9	8766	8766	43
1875	2	2240. 79473	118811	1877. 54	352. 78	9131. 0	3661. 9	2894. 9	9131	9131	408
1876 B	2	2606. 79473	119177	2243. 54	718. 78	9497. 0	4027. 9	142. 8	9497	9497	774
1877	2	2971. 79473	119542	2608. 54	1083. 78	9862. 0	4392. 9	507. 8	9862	9862	1139
1878	2	3336. 79473	119907	2973. 54	1448. 78	10227. 0	4757. 9	872. 8	10227	10227	1504
1879	2	3701. 79473	120272	3338. 54	1813. 78	10592. 0	5122. 9	1237. 8	10592	10592	1869
1880 B	2	4067. 79473	120638	3704. 54	2179. 78	10958. 0	19. 9	1603. 8	10958	191	54
1881	3	100. 20678	121003	4069. 54	2544. 78	11323. 0	384. 9	1968. 8	11323	556	419
1882	3	465. 20678	121368	4434. 54	2909. 78	11688. 0	749. 9	2333. 8	11688	921	784
1883	3	830. 20678	121733	4799. 54	3274. 78	12053. 0	1114. 9	2698. 8	12053	1286	1149
1884 B	3	1196. 20678	122099	5165. 54	3640. 78	12419. 0	1480. 9	3064. 8	12419	1652	1515
1885	3	1561. 20678	122464	5530. 54	4005. 78	12784. 0	1845. 9	311. 7	12784	2017	1880
1886	3	1926. 20678	122829	5895. 54	4370. 78	13149. 0	2210. 9	676. 7	13149	2382	64
1887	3	2291. 20678	123194	6260. 54	346. 67	13514. 0	2575. 9	1041. 7	13514	2747	429
1888 B	3	2657. 20678	123560	6626. 54	712. 67	13880. 0	2941. 9	1407. 7	13880	3113	795
1889	3	3022. 20678	123925	6991. 54	1077. 67	14245. 0	3306. 9	1772. 7	14245	3478	1160
1890	3	3387. 20678	124290	103. 08	1442. 67	14610. 0	3671. 9	2137. 7	14610	3843	1525
1891	3	3752. 20678	124655	468. 08	1807. 67	14975. 0	4036. 9	2502. 7	14975	4208	1890
1892 B	3	4118. 20678	125021	834. 08	2173. 67	15341. 0	4402. 9	2868. 7	15341	4574	75
1893	4	150. 61883	125386	1199. 08	2538. 67	15706. 0	4767. 9	115. 6	15706	4939	440
1894	4	515. 61883	125751	1564. 08	2903. 67	16071. 0	5132. 9	480. 6	16071	5304	805
1895	4	880. 61883	126116	1929. 08	3268. 67	16436. 0	28. 8	845. 6	16436	5669	1170
1896 B	4	1246. 61883	126482	2295. 08	3634. 67	16802. 0	394. 8	1211. 6	16802	6035	1536
1897	4	1611. 61883	126847	2660. 08	3999. 67	17167. 0	759. 8	1576. 6	17167	6400	1901
1898	4	1976. 61883	127212	3025. 08	4364. 67	17532. 0	1124. 8	1941. 6	17532	6765	86
1899	4	2341. 61883	127577	3390. 08	340. 56	17897. 0	1489. 8	2306. 6	17897	7130	451

(Jan. 1 in Bissextile years) of each year during the period 1750-1950.

XI.	XII.	XIII.	XIV.	XV.	XVI.	XVII.	XVIII.	XIX.	XX.	XXI.	XXII.	$\pi + ht.$	Year.
d. o	d. o	d. o	d. o	d. o	d. o	d. o	d. o	d. o	d. o	d. o	d. o	° / "	
365	365	365	365	365	365	365	365	365	128	365	365	11 54 26.72	1850
731	731	731	731	731	731	731	731	731	20	332	731	11 55 16.95	1851
1096	1096	1096	1096	1096	1096	1096	1096	1096	148	298	1096	11 56 7.32	1852 B
1461	1461	1461	1461	1461	1461	1461	1461	1461	39	264	1461	11 56 57.55	1853
												11 57 47.78	1854
1826	1826	1826	1826	149	1826	1826	1826	1826	167	230	1826	11 58 38.01	1855
2192	218	2192	2192	515	2192	2192	2192	2192	59	198	2192	11 59 28.38	1856 B
2557	583	2557	2557	880	2557	2557	2557	2557	187	164	2557	12 0 18.61	1857
2922	948	209	2922	1245	2922	2922	2922	2922	78	130	2922	12 1 8.84	1858
3287	1313	574	197	1610	3287	3287	140	3287	206	96	3287	12 1 59.07	1859
3653	1679	940	563	300	3653	3653	506	3653	98	63	3653	12 2 49.44	1860 B
352	69	1305	928	665	4018	4018	871	4018	226	29	4018	12 3 39.67	1861
717	434	1670	1293	1037	112	4383	1236	83	117	394	4383	12 4 29.90	1862
1082	799	2035	1658	1395	477	4748	1601	448	8	360	356	12 5 20.13	1863
1448	1165	2401	2024	84	843	5114	1967	814	137	327	722	12 6 10.49	1864 B
1813	1530	54	2389	449	1208	5479	2332	1179	28	294	1087	12 7 0.72	1865
2178	1895	419	2754	814	1573	5844	2697	1544	156	260	1452	12 7 50.96	1866
2543	286	784	29	1179	1938	6209	3062	1909	47	226	1817	12 8 41.19	1867
2909	652	1150	395	1545	2304	6575	281	2275	176	193	2183	12 9 31.55	1868 B
3274	1017	1515	760	234	2669	6940	646	2640	67	159	2548	12 10 21.78	1869
3639	1382	1880	1125	599	3034	7305	1011	3005	195	125	2913	12 11 12.01	1970
338	1747	2245	1490	964	3399	7670	1376	3370	86	91	3278	12 12 2.24	1871
704	138	2611	1856	1330	3765	8036	1742	3736	215	58	3644	12 12 52.61	1872 B
1069	503	263	2221	18	4130	8401	2107	4101	106	24	4009	12 13 42.84	1873
1434	868	628	2586	383	225	8766	2472	167	234	389	4374	12 14 33.07	1874
1799	1233	993	2951	748	590	9131	2837	532	125	356	348	12 15 23.30	1875
2165	1599	1359	227	1114	956	9497	56	898	17	323	714	12 16 13.67	1876 B
2530	1964	1724	592	1479	1321	9862	421	1263	145	289	1079	12 17 3.90	1877
2895	355	2089	957	167	1686	10227	786	1628	36	255	1444	12 17 54.13	1878
3260	720	2454	1322	532	2051	10592	1151	1993	164	221	1809	12 18 44.36	1879
3626	1086	107	1688	898	2417	10958	1517	2359	56	188	2175	12 19 34.73	1880 B
326	1451	472	2053	1263	2782	11323	1882	2724	184	154	2540	12 20 24.96	1881
691	1816	837	2418	1628	3147	190	2247	3089	75	120	2905	12 21 15.19	1882
1056	206	1202	2783	317	3512	555	2612	3454	203	86	3270	12 22 5.42	1883
1422	572	1568	60	683	3878	921	2978	3820	95	54	3636	12 22 55.79	1884 B
1787	937	1933	425	1048	4243	1286	196	4185	223	20	4001	12 23 46.02	1885
2152	1302	2298	790	1413	337	1651	561	250	114	385	4366	12 24 36.25	1886
2517	1667	2663	1155	101	702	2016	920	615	5	351	339	12 25 26.48	1887
2883	59	316	1521	467	1068	2382	1292	981	134	318	705	12 26 16.85	1888 B
3248	424	681	1886	832	1433	2747	1657	1346	25	284	1070	12 27 7.08	1889
3613	789	1046	2251	1197	1798	3112	2022	1711	154	250	1435	12 27 57.31	1890
312	1154	1411	2616	1562	2163	3477	2387	2076	45	216	1800	12 28 47.54	1891
678	1520	1777	2982	252	2529	3843	2753	2442	174	183	2166	12 29 37.91	1892 B
1043	1885	2142	257	617	2894	4208	3118	2807	65	150	2531	12 30 28.14	1893
1408	275	2507	622	982	3259	4573	336	3172	193	116	2896	12 31 18.37	1894
1773	640	160	987	1347	3624	4938	701	3537	84	82	3261	12 32 8.60	1895
2139	1006	526	1353	36	3990	5304	1067	3903	213	49	3627	12 32 58.97	1896 B
2504	1371	891	1718	401	85	5669	1432	4268	104	15	3992	12 33 49.20	1897
2869	1736	1256	2083	766	450	6034	1797	334	232	380	4357	12 34 39.43	1898
3234	127	1621	2448	1131	815	6399	2162	699	123	346	330	12 35 29.66	1899

TABLE I.—*Values of the Arguments for the Greenwich mean noon of Jan. 0*

Year.	m.	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.
		d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
1900	4	2706.61883	127942	3755.08	705.56	18262.0	1854.8	2671.6	18262	7495	816
1901	4	3071.61883	128307	4120.08	1070.56	18627.0	2219.8	3036.6	18627	7860	1181
1902	4	3436.61883	128672	4485.08	1435.56	18992.0	2584.8	283.6	18992	8225	1546
1903	4	3801.61883	129037	4850.08	1800.56	19357.0	2949.8	648.6	19357	8590	1911
1904 B	4	4167.61883	129403	5216.08	2166.56	19723.0	3315.8	1014.6	19723	8956	96
1905	5	200.03087	129768	5581.08	2531.56	20088.0	3680.8	1379.6	20088	9321	461
1906	5	565.03087	130133	5946.08	2896.56	20453.0	4045.8	1744.6	20453	9686	826
1907	5	930.03087	130498	6311.08	3261.56	20818.0	4410.8	2109.6	20818	10051	1191
1908 B	5	1296.03087	130864	6677.08	3627.56	21184.0	4776.8	2475.6	330	10417	1557
1909	5	1661.03087	131229	7042.08	3992.56	21549.0	5141.8	2840.6	695	15	1922
1910	5	2026.03087	131594	7417.08	4357.56	21914.0	5516.8	3195.4	1060	380	106
1911	5	2391.03087	131959	7792.08	4722.56	22279.0	5891.8	3570.4	1425	745	471
1912 B	5	2757.03087	132325	8167.08	5087.56	22644.0	6266.8	3945.4	1791	1111	837
1913	5	3122.03087	132690	8542.08	5452.56	23009.0	6641.8	4320.4	2156	1476	1202
1914	5	3487.03087	133055	8917.08	5817.56	23374.0	7016.8	4695.4	2521	1841	1567
1915	5	3852.03087	133420	9292.08	6182.56	23739.0	7391.8	5070.4	2886	2206	1932
1916 B	5	4218.03087	133786	9667.08	6547.56	24104.0	7766.8	5445.4	3252	2572	117
1917	6	250.44292	134151	2710.62	2525.44	2229.2	2594.8	2644.5	3617	2937	482
1918	6	615.44292	134516	3075.62	2890.44	2594.2	2959.8	3009.5	3982	3302	847
1919	6	980.44292	134881	3440.62	3255.44	2959.2	3324.8	3324.8	4347	3667	1212
1920 B	6	1346.44292	135247	3806.62	3621.44	3325.2	3690.8	3690.8	4713	4033	1578
1921	6	1711.44292	135612	4171.62	3986.44	3690.2	4055.8	4055.8	5078	4398	1943
1922	6	2076.44292	135977	4536.62	4351.44	4055.2	4420.8	4420.8	5443	4763	127
1923	6	2441.44292	136342	4901.62	4716.44	4420.2	4785.8	4785.8	5808	5128	492
1924 B	6	2807.44292	136708	5267.62	5081.44	4786.2	5151.8	5151.8	6174	5494	858
1925	6	3172.44292	137073	5632.62	5446.44	5151.2	5516.2	5516.2	6539	5859	1223
1926	6	3537.44292	137438	5997.62	5811.44	5516.2	5881.2	5881.2	6904	6224	1588
1927	6	3902.44292	137803	6262.62	6176.44	5881.2	6247.2	6247.2	7269	6589	1953
1928 B	6	4268.44292	138169	6628.62	6541.44	6247.2	6612.2	6612.2	7635	6955	139
1929	7	300.85497	138534	7093.62	2519.33	6612.2	1508.7	1508.7	8000	7320	504
1930	7	665.85497	138899	205.16	2884.33	6977.2	1873.7	1156.3	8365	7685	869
1931	7	1030.85497	139264	570.16	3249.33	7342.2	2238.7	1521.3	8730	8050	1234
1932 B	7	1396.85497	139630	936.16	3615.33	7708.2	2604.7	1887.3	9096	8416	1600
1933	7	1761.85497	139995	1301.16	3980.33	8073.2	2969.7	2252.3	9461	8781	1965
1934	7	2126.85497	140360	1666.16	4345.33	8438.2	3334.7	2617.3	9826	9146	149
1935	7	2491.85497	140725	2031.16	4710.33	8803.2	3699.7	2982.3	10191	9511	514
1936 B	7	2857.85497	141091	2397.16	5075.33	9169.2	4065.7	3347.3	10557	9877	880
1937	7	3222.85497	141456	2762.16	5440.33	9534.2	4430.7	3712.3	10922	10242	1245
1938	7	3587.85497	141821	3127.16	5805.33	9899.2	4795.7	4077.3	11287	10607	1610
1939	7	3952.85497	142186	3492.16	6170.33	10264.2	5160.7	4442.3	11652	205	1975
1940 B	7	4318.85497	142552	3858.16	6535.33	10630.2	5525.7	4807.3	12018	571	160
1941	8	351.26702	142917	4223.16	2513.22	10995.2	422.7	2056.3	12383	936	525
1942	8	716.26702	143282	4588.16	2878.22	11360.2	787.7	2421.3	12748	1301	890
1943	8	1081.26702	143647	4953.16	3243.22	11725.2	1152.7	2786.3	13113	1666	1255
1944 B	8	1447.26702	144013	5319.16	3609.22	12091.2	1518.7	34.2	13479	2032	1621
1945	8	1812.26702	144378	5684.16	3974.22	12456.2	1883.7	399.2	13844	2397	1986
1946	8	2177.26702	144743	6049.16	4339.22	12821.2	2248.7	764.2	14209	2762	170
1947	8	2542.26702	145108	6414.16	4704.22	13186.2	2613.7	1129.2	14574	3127	535
1948 B	8	2908.26702	145474	6780.16	5069.22	13552.2	3079.7	1495.2	14940	3493	901
1949	8	3273.26702	145839	7145.16	5434.22	13917.2	3444.7	1860.2	15305	3858	1266

(Jan. 1 in Bissextile years) of each year during the period 1750-1950.

XI.	XII.	XIII.	XIV.	XV.	XVI.	XVII.	XVIII.	XIX.	XX.	XXI.	XXII.	$\pi + \mu$.	Year.
d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	° / "	
3599	492	1986	2813	1496	1180	6764	2527	1064	14	312	695	12 36 19.89	1900
298	857	2351	88	184	1545	7129	2892	1429	142	278	1060	12 37 10.12	1901
663	1222	3	453	549	1910	7494	110	1794	33	244	1425	12 38 0.35	1902
1028	1587	368	818	914	2275	7859	475	2159	161	211	1790	12 38 50.58	1903
1394	1953	734	1184	1280	2641	8225	841	2525	53	178	2156	12 39 40.95	1904 B
1759	343	1099	1549	1645	3006	8590	1206	2890	181	143	2521	12 40 31.18	1905
2124	708	1464	1914	334	3371	8955	1571	3255	72	110	2886	12 41 21.41	1906
2489	1073	1829	2279	699	3736	9320	1936	3620	200	76	3251	12 42 11.64	1907
2855	1439	2195	2645	1065	4102	9686	2302	3986	92	43	3617	12 43 2.00	1908 B
3220	1804	2560	3010	1430	196	10051	2667	51	220	9	3982	12 43 52.23	1909
3585	195	212	285	118	561	10416	3032	416	111	374	4347	12 44 42.46	1910
284	560	577	650	483	926	10781	250	781	2	340	321	12 45 32.70	1911
650	926	943	1016	849	1292	11147	616	1147	131	307	687	12 46 23.06	1912 B
1015	1291	1308	1381	1214	1657	14	981	1512	22	274	1052	12 47 13.29	1913
1380	1656	1673	1746	1579	2022	379	1346	1877	150	240	1417	12 48 3.52	1914
1745	46	2038	2111	268	2387	744	1711	2242	41	206	1782	12 48 53.75	1915
2111	412	2404	2477	634	2753	1110	2077	2608	170	173	2148	12 49 44.12	1916 B
2476	777	56	2842	999	3118	1475	2442	2973	61	139	2513	12 50 34.35	1917
2841	1142	421	117	1364	3483	1840	2807	3338	189	105	2878	12 51 24.58	1918
3206	1507	786	482	52	3848	2205	25	3703	80	71	3243	12 52 14.81	1919
3572	1873	1152	848	418	4214	2571	391	4069	209	38	3609	12 53 5.18	1920 B
272	264	1517	1213	783	308	2936	756	134	100	5	3974	12 53 55.41	1921
637	629	1882	1578	1148	673	3301	1121	499	228	370	4339	12 54 45.64	1922
1002	994	2247	1943	1513	1038	3666	1486	864	119	336	312	12 55 35.87	1923
1368	1360	2613	2309	202	1404	4032	1852	1230	11	303	678	12 56 26.24	1924 B
1733	1725	266	2674	567	1769	4397	2217	1595	139	269	1043	12 57 16.47	1925
2098	115	631	3039	932	2134	4762	2582	1960	30	235	1408	12 58 6.70	1926
2463	480	996	314	1297	2499	5127	2947	2325	158	201	1773	12 58 56.93	1927
2829	846	1362	680	1663	2865	5493	166	2691	50	168	2139	12 59 47.30	1928 B
3194	1211	1727	1045	352	3230	5858	531	3056	178	134	2504	13 0 37.53	1929
3559	1576	2092	1510	717	3595	6223	896	3421	69	100	2869	13 1 27.76	1930
258	1941	2457	1775	1082	3960	6588	1261	3786	197	67	3234	13 2 17.99	1931
624	333	110	2141	1448	56	6954	1627	4152	89	34	3600	13 3 8.36	1932 B
989	698	475	2506	136	421	7319	1992	218	217	0	3965	13 3 58.59	1933
1354	1063	840	2871	501	786	7684	2357	583	108	365	4330	13 4 48.82	1934
1719	1428	1205	146	866	1151	8049	2722	948	236	331	303	13 5 39.05	1935
2085	1794	1571	512	1232	1517	8415	3088	1314	128	298	669	13 6 29.42	1936 B
2450	184	1936	877	1597	1882	8780	306	1679	19	264	1034	13 7 19.65	1937
2815	549	2301	1242	286	2247	9145	671	2044	147	230	1399	13 8 9.88	1938
3180	914	2666	1607	651	2612	9510	1036	2409	38	196	1764	13 9 0.11	1939
3546	1280	319	1973	1017	2978	9876	1402	2775	167	164	2130	13 9 50.47	1940 B
245	1645	684	2338	1382	3343	10241	1767	3140	58	130	2495	13 10 40.71	1941
610	36	1049	2703	70	3708	10606	2132	3505	186	96	2860	13 11 30.94	1942
975	401	1414	3068	435	4073	10971	2497	3870	77	62	3225	13 12 21.17	1943
1341	767	1780	345	801	168	11337	2863	4236	206	29	3591	13 13 11.53	1944 B
1706	1132	2145	710	1166	533	204	81	301	97	394	3956	13 14 1.76	1945
2071	1497	2510	1075	1531	898	569	446	666	225	360	4321	13 14 51.99	1946
2436	1862	162	1440	219	1263	934	811	1031	116	326	295	13 15 42.22	1947
2802	253	528	1806	585	1629	1300	1177	1397	8	293	661	13 16 32.59	1948 B
3167	618	893	2171	950	1994	1665	1542	1762	136	259	1026	13 17 22.82	1949

TABLE II.—Quantities which must be added to the Arguments of the Nineteenth Century (1801 to 1900, inclusive) in order to obtain the Arguments of the corresponding years of other centuries.

Year.	m.	I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.
		d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
— 200 J	— 169	1719. 364	. . . . .	2112.	2494.	3491.	2366.	2259.	20265	1667	79
— 100	— 161	3583. 660	. . . . .	2369.	3906.	17775.	607.	1367.	15081	5891	1711
0	— 152	1115. 369	. . . . .	2627.	929.	9816.	4318.	475.	9898	10115	1163
100	— 144	2979. 665	. . . . .	2885.	2341.	1857.	2560.	2702.	4714	3573	614
200	— 135	511. 373	. . . . .	3142.	3753.	16141.	801.	1810.	20385	7797	66
300	— 127	2375. 670	. . . . .	3400.	776.	8182.	4512.	918.	15202	1254	1698
400	— 119	4239. 966	. . . . .	3658.	2188.	223.	2753.	26.	10018	5478	1149
500	— 110	1771. 675	. . . . .	3915.	3600.	14507.	995.	2252.	4835	9702	601
600	— 102	3635. 971	. . . . .	4173.	623.	6548.	4706.	1360.	20505	3159	52
700	— 93	1167. 679	. . . . .	4431.	2035.	20831.	2947.	468.	15322	7383	1685
800	— 85	3031. 976	. . . . .	4688.	3477.	12873.	1189.	2695.	10138	840	1136
900	— 76	563. 684	. . . . .	4946.	470.	4914.	4899.	1803.	4955	5064	587
1000	— 68	2427. 981	. . . . .	5204.	1882.	19197.	3141.	911.	20626	9288	39
1100	— 60	4292. 277	. . . . .	5462.	3295.	11239.	1383.	19.	15442	2745	1671
1200	— 51	1823. 985	. . . . .	5719.	318.	3280.	5093.	2245.	10259	6969	1123
1300	— 43	3688. 282	. . . . .	5977.	1730.	17563.	3335.	1353.	5075	426	574
1400	— 34	1219. 990	. . . . .	6235.	3142.	9605.	1577.	461.	20746	4650	25
1500 J	— 26	3084. 28672	— 109563	6492. 37	164. 78	1646. 0	5287. 2	2687. 6	15562	8874	1658
1500 G	— 26	3074. 28672	— 109573	6482. 37	154. 78	1636. 0	5277. 2	2677. 6	15552	8864	1648
1600	— 17	605. 99516	— 73048	6740. 07	1566. 89	15919. 2	3518. 8	1785. 8	10369	2321	1099
1700	— 9	2469. 29156	— 36524	6996. 76	2978. 00	7959. 6	1759. 4	892. 9	5184	6544	550
1900	8	1863. 29639	36524	256. 70	1411. 11	14282. 2	3709. 7	2225. 2	15670	4223	1631
2000	16	3727. 59277	73049	514. 39	2823. 22	6323. 6	1951. 3	1333. 3	10486	8447	1083
2100	25	1258. 30123	109573	771. 09	4234. 33	20605. 8	191. 9	440. 4	5302	1903	533
2200	33	3121. 59763	146097	1027. 79	1256. 33	12646. 2	3901. 5	2665. 6	117	6126	2164

Year.	XI.	XII.	XIII.	XIV.	XV.	XVI.	XVII.	XVIII.	XIX.	XX.	XXI.	XXII.	$\pi + h.$
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	° / "
— 200 J	2663	72	1954	1807	511	4053	5375	2754	. . .	. . .	. . .	2921	332 4 32
— 100	2530	1056	501	1254	151	2143	7406	1516	. . .	. . .	. . .	4312	333 28 19
0	2398	66	1760	701	1467	232	9438	277	. . .	. . .	. . .	1312	334 52 5
100	2265	1050	307	148	1107	2593	11469	2186	. . .	. . .	. . .	2704	336 15 52
200	2133	60	1566	2684	747	682	2003	947	. . .	. . .	. . .	4096	337 39 38
300	2000	1044	112	2131	386	3043	4034	2856	. . .	. . .	. . .	1096	339 3 25
400	1868	54	1372	1578	26	1132	6066	1617	. . .	. . .	. . .	2487	340 27 11
500	1735	1038	2631	1024	1342	3493	8097	378	. . .	. . .	. . .	3879	341 50 58
600	1603	48	1177	471	982	1582	10129	2287	. . .	. . .	. . .	879	343 14 44
700	1470	1032	2437	3008	622	3943	662	1048	. . .	. . .	. . .	2271	344 38 30
800	1337	42	983	2455	262	2033	2694	2957	. . .	. . .	. . .	3662	346 2 17
900	1205	1026	2242	1901	1578	122	4725	1718	. . .	. . .	. . .	662	347 26 3
1000	1072	36	789	1348	1218	2483	6756	480	. . .	. . .	. . .	2054	348 49 50
1100	940	1020	2048	795	857	572	8788	2388	. . .	. . .	. . .	3445	350 13 36
1200	807	30	595	242	497	2933	10819	1149	. . .	. . .	. . .	445	351 37 23
1300	675	1014	1854	2778	137	1022	1353	3058	. . .	. . .	. . .	1837	353 1 9
1400	542	24	400	2225	1453	3383	3384	1819	. . .	. . .	. . .	3229	354 24 56
1500 J	410	1008	1660	1672	1093	1472	5416	581	2227	164	130	229	355 48 42. 24
1500 G	400	998	1650	1662	1083	1462	5406	571	2217	154	120	219	355 48 40. 86
1600	267	8	196	1108	723	3823	7437	2479	45	182	347	1610	357 12 27. 33
1700	134	991	1454	554	361	1911	9467	1240	2173	210	173	3000	358 36 13. 67
1900	3532	983	1258	2536	1315	2359	2030	1907	2127	27	226	1391	1 23 46. 33
2000	3400	1968	2518	1982	955	449	4062	669	4255	55	53	2782	2 47 32. 80
2100	3266	976	1063	1428	594	2808	6092	2576	2083	83	279	4173	4 11 19. 14
2200	3133	1960	2321	874	233	897	8123	1337	4210	110	105	1172	5 35 5. 47

TABLE III.—Days from beginning of the year.

	Common year.	Bissextile year.
	d.	d.
Jan. o	0	— 1
Feb. o	31	30
Mar. o	59	59
Apr. o	90	90
May o	120	120
June o	151	151
July o	181	181
Aug. o	212	212
Sept. o	243	243
Oct. o	273	273
Nov. o	304	304
Dec. o	334	334

TABLE IV.—Motion of $\pi + ht$ for days.

d.	//
1	0. 138
2	0. 275
3	0. 413
4	0. 550
5	0. 688
6	0. 826
7	0. 963
8	1. 101
9	1. 239
10	1. 376
20	2. 752
30	4. 129
40	5. 505
50	6. 881
60	8. 257
70	9. 633
80	11. 009
90	12. 386
100	13. 762
200	27. 523
300	41. 285

TABLE V.—Vertical Arguments for the tables of double entry.

m.	A.	B.	C.
—100	87. 76	52. 87	28. 9
—90	90. 98	17. 58	18. 7
—80	94. 21	42. 30	8. 7
—70	97. 43	7. 01	34. 6
—60	100. 66	31. 72	24. 5
—50	103. 88	56. 44	14. 4
—40	107. 10	21. 15	4. 3
—30	110. 33	45. 86	30. 3
—20	113. 55	10. 57	20. 2
—10	116. 78	35. 29	10. 1
—9	0. 21	16. 98	4. 8
—8	48. 53	25. 45	7. 4
—7	96. 85	33. 93	10. 0
—6	25. 17	42. 40	12. 6
—5	73. 50	50. 87	15. 2
—4	1. 82	59. 34	17. 8
—3	50. 14	7. 81	20. 3
—2	98. 46	16. 28	22. 9
—1	26. 79	24. 75	25. 5
0	75. 11	33. 22	28. 1
1	3. 43	41. 70	30. 7
2	51. 75	50. 17	33. 3
3	100. 08	58. 64	35. 9
4	28. 40	7. 11	2. 5
5	76. 72	15. 58	5. 1
6	5. 04	24. 05	7. 7
7	53. 37	32. 52	10. 3
8	101. 69	40. 99	12. 9
9	30. 01	49. 47	15. 4
10	3. 22	24. 71	25. 9
20	6. 45	49. 43	15. 8
30	9. 67	14. 14	5. 7
40	12. 90	38. 85	31. 7

TABLE VI.—Periods of the Arguments.

Arg.	Period.
	d.
I.	4332. 58795067
II.	No period, current days simply.
III.	7253. 4606466
IV.	4389. 111213
V.	22241. 79734
VI.	5469. 05729
VII.	3118. 073045
VIII.	20854. 24730
IX.	10766. 9916
X.	2180. 79777
XI.	3665. 75492
XII.	1974. 48543
XIII.	2712. 74906
XIV.	3089. 85358
XV.	1676. 60346
XVI.	4270. 58739
XVII.	11497. 8600
XVIII.	3146. 96316
XIX.	4299. 61313
XX.	236. 9919
XXI.	398. 8840
XXII.	4391. 66883
A.	120 units.
B.	60 units.
C.	36 units.

NOTE.—In forming the arguments, add to each of those designated by the Roman letters I-XXII the number of days from the beginning of the year, which may be derived from Table III, and to $\pi + ht$ its motion for the same number of days, concluded from Table IV. The vertical arguments are linear functions of m ; if m contains only a single figure, they may be taken immediately from Table V; but if m contains two or three figures the amount of change for negative or positive multiples of 10 in the value of m is given in the upper and lower portions of the table. Next, each argument, II excepted, must be rendered less than its period by subtracting the requisite multiple of the latter derived from Table VI. In fine, as many units must be added *algebraically* to m as periods have been subtracted from the value of Argument I. The latter value of m is that with which Table V must be entered.

Inequalities of the Fundamental Argument multiplied by 3.

TABLE VII.

Arg. I.	Equation.	Arg. I.	Equation.
d.		d.	
0	978	2200	689
40	948	2240	688
80	918	2280	686
120	887	2320	683
160	856	2360	679
200	825	2400	673
240	795	2440	666
280	765	2480	658
320	735	2520	649
360	706	2560	639
400	679	2600	627
440	652	2640	614
480	626	2680	601
520	602	2720	586
560	579	2760	570
600	558	2800	553
640	539	2840	535
680	521	2880	516
720	506	2920	497
760	492	2960	476
800	480	3000	455
840	470	3040	434
880	462	3080	412
920	456	3120	389
960	452	3160	366
1000	450	3200	343
1040	450	3240	320
1080	452	3280	296
1120	455	3320	273
1160	460	3360	250
1200	466	3400	228
1240	473	3440	206
1280	482	3480	184
1320	491	3520	164
1360	502	3560	144
1400	513	3600	125
1440	525	3640	108
1480	537	3680	92
1520	550	3720	77
1560	562	3760	64
1600	575	3800	52
1640	588	3840	42
1680	600	3880	35
1720	612	3920	29
1760	623	3960	25
1800	634	4000	23
1840	643	4040	24
1880	653	4080	26
1920	661	4120	31
1960	668	4160	38
2000	674	4200	48
2040	680	4240	60
2080	684	4280	74
2120	687	4320	91
2160	688	4360	110
2200	689	4400	131

TABLE VIII.

Year.	Equation.	Year.	Equation.	Arg. II.	Equation.
d.		d.		d.	
-240	19.24	860	25.42	17280	16.0645
220	20.73	880	25.18	18360	16.2905
200	22.15	900	24.79	19440	16.5163
180	23.32	920	24.16	20520	16.7421
160	24.30	940	23.27	21600	16.9674
140	25.14	960	22.23	22680	17.1917
120	25.73	980	21.03	23760	17.4140
100	26.03	1000	19.62	24840	17.6344
80	26.16	1020	18.11	25920	17.8524
60	26.06	1040	16.53	27000	18.0673
40	25.63	1060	14.84	28080	18.2785
20	25.01	1080	13.10	29160	18.4863
0	24.21	1100	11.41	30240	18.6906
20	23.11	1120	9.72	31320	18.8911
40	21.83	1140	8.06	32400	19.0878
60	20.44	1160	6.54	33480	19.2812
80	18.85	1180	5.14	34560	19.4715
100	17.12	1200	3.83	35640	19.6590
120	15.38	1220	2.73	36720	19.8437
140	13.56	1240	1.85	37800	20.0262
160	11.67	1260	1.10	38880	20.2067
180	9.87	1280	0.59	39960	20.3852
200	8.13	1300	0.34	41040	20.5618
220	6.42	1320	0.27	42120	20.7366
240	4.86	1340	0.43	43200	20.9095
260	3.51	1360	0.83	44280	21.0804
280	2.26	1380	1.42	45360	21.2487
300	1.21	1400	2.19	46440	21.4144
320	0.45	1420	3.17	47520	21.5772
340	-0.14	1440	4.32	48600	21.7365
360	-0.52	1460	5.56	49680	21.8919
380	-0.58	1480	6.95	50760	22.0432
400	-0.44	1500	8.46	51840	22.1902
420	-0.11	1520	9.98	52920	22.3323
440	0.50	1540	11.56	54000	22.4695
460	1.34	1560	13.20	55080	22.6017
480	2.31	Arg. II.		56160	22.7288
500	3.48	d.		57240	22.8510
520	4.85	0	12.3506	58320	22.9683
540	6.29	1080	12.5942	59400	23.0811
560	7.82	2160	12.8368	60480	23.1896
580	9.50	3240	13.0782	61560	23.2940
600	11.19	4320	13.3181	62640	23.3946
620	12.85	5400	13.5560	63720	23.4919
640	14.58	6480	13.7912	64800	23.5860
660	16.25	7560	14.0243	65880	23.6770
680	17.81	8640	14.2554	66960	23.7649
700	19.33	9720	14.4845	68040	23.8499
720	20.73	10800	14.7117	69120	23.9318
740	21.94	11880	14.9378	70200	24.0103
760	23.02	12960	15.1634	71280	24.0850
780	23.95	14040	15.3886	72360	24.1557
800	24.63	15120	15.6135	73440	24.2219
820	25.09	16200	15.8387	74520	24.2829
840	25.38	17280	16.0645		
860	25.42				

The quantities tabulated are in units of the fourth decimal of the day.

Inequalities of the Fundamental Argument multiplied by 3—Continued.

TABLE VIII—Continued.

Arg. II.	Equation.	Arg. II.	Equation.	Arg. II.	Equation.	Arg. II.	Equation.
d.	d.	d.	d.	d.	d.	d.	d.
73800	24. 2429 + 204	93600	24. 4910 — 81	113400	23. 1760 — 372	133200	20. 4645 — 619
74160	24. 2633 + 198	93960	24. 4829 — 84	113760	23. 1388 — 375	133560	20. 4026 — 620
74520	24. 2831 + 192	94320	24. 4745 — 90	114120	23. 1013 — 377	133920	20. 3406 — 623
74880	24. 3023 + 186	94680	24. 4655 — 94	114480	23. 0636 — 381	134280	20. 2783 — 624
75240	24. 3209 + 180	95040	24. 4561 — 98	114840	23. 0255 — 383	134640	20. 2159 — 626
75600	24. 3389 + 173	95400	24. 4463 — 104	115200	22. 9872 — 387	135000	20. 1533 — 628
75960	24. 3562 + 167	95760	24. 4359 — 110	115560	22. 9485 — 389	135360	20. 0905 — 630
76320	24. 3729 + 160	96120	24. 4249 — 115	115920	22. 9096 — 393	135720	20. 0275 — 631
76680	24. 3889 + 154	96480	24. 4134 — 120	116280	22. 8703 — 396	136080	19. 9644 — 633
77040	24. 4043 + 147	96840	24. 4014 — 127	116640	22. 8307 — 400	136440	19. 9011 — 635
77400	24. 4190 + 140	97200	24. 3887 — 132	117000	22. 7907 — 404	136800	19. 8376 — 636
77760	24. 4330 + 134	97560	24. 3755 — 139	117360	22. 7503 — 407	137160	19. 7740 — 638
78120	24. 4464 + 126	97920	24. 3616 — 145	117720	22. 7096 — 412	137520	19. 7102 — 640
78480	24. 4590 + 119	98280	24. 3471 — 151	118080	22. 6684 — 415	137880	19. 6462 — 641
78840	24. 4709 + 112	98640	24. 3320 — 159	118440	22. 6269 — 421	138240	19. 5821 — 643
79200	24. 4821 + 105	99000	24. 3161 — 165	118800	22. 5848 — 424	138600	19. 5178 — 645
79560	24. 4926 + 98	99360	24. 2996 — 172	119160	22. 5424 — 430	138960	19. 4533 — 647
79920	24. 5024 + 92	99720	24. 2824 — 179	119520	22. 4994 — 435	139320	19. 3886 — 648
80280	24. 5116 + 85	100080	24. 2645 — 186	119880	22. 4559 — 439	139680	19. 3238 — 651
80640	24. 5201 + 78	100440	24. 2459 — 193	120240	22. 4120 — 445	140040	19. 2587 — 652
81000	24. 5279 + 72	100800	24. 2266 — 201	120600	22. 3675 — 450	140400	19. 1935 — 656
81360	24. 5351 + 66	101160	24. 2065 — 208	120960	22. 3225 — 456	140760	19. 1279 — 657
81720	24. 5417 + 59	101520	24. 1857 — 214	121320	22. 2769 — 462	141120	19. 0622 — 660
82080	24. 5476 + 53	101880	24. 1643 — 222	121680	22. 2307 — 467	141480	18. 9962 — 663
82440	24. 5529 + 47	102240	24. 1421 — 229	122040	22. 1840 — 473	141840	18. 9299 — 666
82800	24. 5576 + 41	102600	24. 1192 — 237	122400	22. 1367 — 479	142200	18. 8633 — 668
83160	24. 5617 + 35	102960	24. 0955 — 243	122760	22. 0888 — 485	142560	18. 7965 — 671
83520	24. 5652 + 30	103320	24. 0712 — 250	123120	22. 0403 — 491	142920	18. 7294 — 675
83880	24. 5682 + 24	103680	24. 0462 — 256	123480	21. 9912 — 497	143280	18. 6619 — 677
84240	24. 5706 + 20	104040	24. 0206 — 264	123840	21. 9415 — 504	143640	18. 5942 — 681
84600	24. 5726 + 14	104400	23. 9942 — 269	124200	21. 8911 — 509	144000	18. 5261 — 684
84960	24. 5740 + 9	104760	23. 9673 — 277	124560	21. 8402 — 516	144360	18. 4577 — 688
85320	24. 5749 + 5	105120	23. 9396 — 282	124920	21. 7886 — 521	144720	18. 3889 — 691
85680	24. 5754 + 1	105480	23. 9114 — 288	125280	21. 7365 — 527	145080	18. 3198 — 695
86040	24. 5755 + 4	105840	23. 8826 — 294	125640	21. 6838 — 534	145440	18. 2503 — 699
86400	24. 5751 + 8	106200	23. 8532 — 299	126000	21. 6304 — 538	145800	18. 1804 — 703
86760	24. 5743 + 12	106560	23. 8233 — 305	126360	21. 5766 — 545	146160	18. 1101 — 706
87120	24. 5731 + 16	106920	23. 7928 — 309	126720	21. 5221 — 550	146520	18. 0395 — 710
87480	24. 5715 + 20	107280	23. 7619 — 315	127080	21. 4671 — 555	146880	17. 9685 — 715
87840	24. 5695 + 23	107640	23. 7304 — 319	127440	21. 4116 — 561	147240	17. 8968 — 718
88200	24. 5672 + 28	108000	23. 6985 — 324	127800	21. 3555 — 566	147600	17. 8246 — 722
88560	24. 5644 + 30	108360	23. 6661 — 328	128160	21. 2989 — 571	147960	17. 7513 — 725
88920	24. 5614 + 33	108720	23. 6333 — 332	128520	21. 2418 — 575	148320	17. 6776 — 727
89280	24. 5581 + 37	109080	23. 6001 — 336	128880	21. 1843 — 580	148680	17. 6030 — 729
89640	24. 5544 + 40	109440	23. 5665 — 339	129240	21. 1263 — 584	149040	17. 5284 — 731
90000	24. 5504 + 44	109800	23. 5326 — 343	129600	21. 0679 — 589	149400	17. 4538 — 733
90360	24. 5460 + 47	110160	23. 4983 — 346	129960	21. 0090 — 592	149760	17. 3792 — 735
90720	24. 5413 + 50	110520	23. 4637 — 350	130320	20. 9498 — 595	150120	17. 3046 — 737
91080	24. 5363 + 54	110880	23. 4287 — 352	130680	20. 8903 — 600	150480	17. 2299 — 739
91440	24. 5309 + 57	111240	23. 3935 — 356	131040	20. 8303 — 602	150840	17. 1552 — 741
91800	24. 5252 + 61	111600	23. 3579 — 358	131400	20. 7701 — 606	151200	17. 0805 — 743
92160	24. 5191 + 65	111960	23. 3221 — 361	131760	20. 7095 — 609	151560	17. 0058 — 745
92520	24. 5126 + 68	112320	23. 2860 — 364	132120	20. 6486 — 611	151920	16. 9311 — 747
92880	24. 5058 + 72	112680	23. 2496 — 367	132480	20. 5875 — 614	152280	16. 8564 — 749
93240	24. 4986 + 76	113040	23. 2129 — 369	132840	20. 5261 — 616	152640	16. 7817 — 751
93600	24. 4910 + 81	113400	23. 1760 — 372	133200	20. 4645 — 619	153000	16. 7070 — 753

Inequalities of the Fundamental Argument multiplied by 3—Continued.

TABLE VIII—Continued.

Arg. II.	Equation.	Year.	Equation.
d.	d.		d.
165240	14. 0505 —2341	2200	1. 56 —40
166320	13. 8164 2345	2220	1. 16 —24
167400	13. 5819 2350	2240	0. 92 0
168480	13. 3469 2356	2260	0. 92 +24
169560	13. 1113 2365	2280	1. 16 +40
170640	12. 8748 2376	2300	1. 56 +40
171720	12. 6372 2388		
172800	12. 3984 2399		
173880	12. 1585 2408		
174960	11. 9177 2418		
176040	11. 6759 2424		
177120	11. 4335 2425		
178200	11. 1910 2423		
179280	10. 9487 2416		
180360	10. 7071 2404		
181440	10. 4667 2385		
182520	10. 2282 2363		
183600	9. 9919 2341		
184680	9. 7578 2313		
185760	9. 5265 2282		
186840	9. 2983 2254		
187920	9. 0729 2227		
189000	8. 8502 2203		
190080	8. 6299 2179		
191160	8. 4120 2159		
192240	8. 1961 2147		
193320	7. 9814 2136		
194400	7. 7678 2125		
195480	7. 5553 2120		
196560	7. 3433 2116		
197640	7. 1317 2110		
198720	6. 9207 2099		
199800	6. 7108 2088		
200880	6. 5020 2074		
201960	6. 2946 2052		
203040	6. 0894 2022		
204120	5. 8872 1987		
205200	5. 6885 1950		
206280	5. 4935 1906		
207360	5. 3029 1855		
208440	5. 1174 1806		
209520	4. 9368 1757		
210600	4. 7611 1708		
211680	4. 5903 1659		
212760	4. 4244 1616		
213840	4. 2628 1581		
214920	4. 1047 1547		
216000	3. 9500 1517		
217080	3. 7983 1492		
218160	3. 6491 1474		
219240	3. 5017		
Year.			
2140	4. 01 —99		
2160	3. 02 86		
2180	2. 16 —60		
2200	1. 56		

TABLE IX.

Arg. III.	Equation.	Arg. III.	Equation.	Arg. III.	Equation.
d.	d.	d.	d.	d.	d.
0	0. 3259 +366	1060	3. 7503 +633	2120	4. 5437 —406
20	0. 3625 +366	1080	3. 8136 +621	2140	4. 5031 —423
40	0. 4010 385	1100	3. 8757 608	2160	4. 4608 440
60	0. 4415 405	1120	3. 9365 595	2180	4. 4168 457
80	0. 4839 424	1140	3. 9960 580	2200	4. 3711 473
100	0. 5282 443	1160	4. 0540 566	2220	4. 3238 488
120	0. 5743 461	1180	4. 1106 551	2240	4. 2750 503
140	0. 6222 479	1200	4. 1657 535	2260	4. 2247 518
160	0. 6719 497	1220	4. 2192 519	2280	4. 1729 532
180	0. 7233 514	1240	4. 2711 502	2300	4. 1197 546
200	0. 7763 530	1260	4. 3213 485	2320	4. 0651 558
220	0. 8309 546	1280	4. 3698 468	2340	4. 0093 570
240	0. 8871 562	1300	4. 4166 449	2360	3. 9523 582
260	0. 9447 576	1320	4. 4615 432	2380	3. 8941 592
280	1. 0038 591	1340	4. 5047 413	2400	3. 8349 603
300	1. 0642 604	1360	4. 5460 393	2420	3. 7746 613
320	1. 1260 618	1380	4. 5853 374	2440	3. 7133 622
340	1. 1891 631	1400	4. 6227 355	2460	3. 6511 631
360	1. 2534 643	1420	4. 6582 334	2480	3. 5880 638
380	1. 3188 654	1440	4. 6916 313	2500	3. 5242 644
400	1. 3853 665	1460	4. 7229 293	2520	3. 4598 651
420	1. 4528 675	1480	4. 7522 273	2540	3. 3947 657
440	1. 5213 685	1500	4. 7795 251	2560	3. 3290 662
460	1. 5907 694	1520	4. 8046 229	2580	3. 2628 665
480	1. 6609 702	1540	4. 8275 209	2600	3. 1963 669
500	1. 7319 710	1560	4. 8484 186	2620	3. 1294 672
520	1. 8036 717	1580	4. 8670 164	2640	3. 0622 674
540	1. 8759 723	1600	4. 8834 143	2660	2. 9948 674
560	1. 9487 728	1620	4. 8977 120	2680	2. 9274 675
580	2. 0221 734	1640	4. 9097 98	2700	2. 8599 675
600	2. 0959 741	1660	4. 9195 76	2720	2. 7924 674
620	2. 1700 746	1680	4. 9271 53	2740	2. 7250 671
640	2. 2444 746	1700	4. 9324 31	2760	2. 6579 669
660	2. 3190 748	1720	4. 9355 +9	2780	2. 5910 666
680	2. 3938 748	1740	4. 9364 —14	2800	2. 5244 661
700	2. 4687 748	1760	4. 9350 36	2820	2. 4583 657
720	2. 5435 748	1780	4. 9314 58	2840	2. 3926 650
740	2. 6183 747	1800	4. 9256 80	2860	2. 3276 644
760	2. 6930 744	1820	4. 9176 102	2880	2. 2632 637
780	2. 7674 742	1840	4. 9074 125	2900	2. 1995 629
800	2. 8416 738	1860	4. 8949 146	2920	2. 1366 620
820	2. 9154 735	1880	4. 8803 168	2940	2. 0746 611
840	2. 9889 729	1900	4. 8635 189	2960	2. 0135 600
860	3. 0618 724	1920	4. 8446 210	2980	1. 9535 589
880	3. 1342 718	1940	4. 8236 231	3000	1. 8946 578
900	3. 2060 711	1960	4. 8005 251	3020	1. 8368 565
920	3. 2771 703	1980	4. 7754 273	3040	1. 7803 553
940	3. 3474 696	2000	4. 7481 292	3060	1. 7250 538
960	3. 4170 686	2020	4. 7189 312	3080	1. 6712 524
980	3. 4856 678	2040	4. 6877 332	3100	1. 6188 508
1000	3. 5534 667	2060	4. 6545 351	3120	1. 5680 493
1020	3. 6201 656	2080	4. 6194 369	3140	1. 5187 477
1040	3. 6857 +646	2100	4. 5825 388	3160	1. 4710 459
1060	3. 7503	2120	4. 5437	3180	1. 4251

Inequalities of the Fundamental Argument multiplied by 3—Continued.

TABLE IX—Continued.

Arg. III.	Equation.	Arg. III.	Equation.	Arg. III.	Equation.	Arg. III.	Equation.
d.	d.	d.	d.	d.	d.	d.	d.
3180	1. 4251	4220	2. 1317	5260	3. 9790	6300	1. 0696
3200	1. 3810	4240	2. 1964	5280	3. 9571	6320	1. 0107
3220	1. 3387	4260	2. 2617	5300	3. 9329	6340	9530
3240	1. 2982	4280	2. 3275	5320	3. 9064	6360	8966
3260	1. 2598	4300	2. 3936	5340	3. 8776	6380	8416
3280	1. 2233	4320	2. 4599	5360	3. 8467	6400	7879
3300	1. 1888	4340	2. 5262	5380	3. 8136	6420	7356
3320	1. 1565	4360	2. 5926	5400	3. 7784	6440	6849
3340	1. 1264	4380	2. 6587	5420	3. 7412	6460	6357
3360	1. 0984	4400	2. 7245	5440	3. 7020	6480	5881
3380	1. 0727	4420	2. 7899	5460	3. 6608	6500	5422
3400	1. 0493	4440	2. 8548	5480	3. 6177	6520	4980
3420	1. 0282	4460	2. 9189	5500	3. 5728	6540	4556
3440	1. 0094	4480	2. 9823	5520	3. 5261	6560	4150
3460	9931	4500	3. 0447	5540	3. 4778	6580	3763
3480	9792	4520	3. 1061	5560	3. 4277	6600	3394
3500	9677	4540	3. 1664	5580	3. 3761	6620	3045
3520	9588	4560	3. 2254	5600	3. 3230	6640	2715
3540	9523	4580	3. 2830	5620	3. 2684	6660	2406
3560	9484	4600	3. 3392	5640	3. 2123	6680	2117
3580	9470	4620	3. 3938	5660	3. 1550	6700	1849
3600	9481	4640	3. 4468	5680	3. 0964	6720	1602
3620	9518	4660	3. 4980	5700	3. 0367	6740	1377
3640	9581	4680	3. 5475	5720	2. 9758	6760	1173
3660	9669	4700	3. 5950	5740	2. 9139	6780	991
3680	9783	4720	3. 6405	5760	2. 8511	6800	831
3700	9923	4740	3. 6841	5780	2. 7873	6820	693
3720	1. 0089	4760	3. 7255	5800	2. 7227	6840	578
3740	1. 0279	4780	3. 7648	5820	2. 6574	6860	485
3760	1. 0495	4800	3. 8018	5840	2. 5915	6880	415
3780	1. 0736	4820	3. 8366	5860	2. 5249	6900	368
3800	1. 1001	4840	3. 8691	5880	2. 4579	6920	344
3820	1. 1291	4860	3. 8992	5900	2. 3904	6940	342
3840	1. 1605	4880	3. 9269	5920	2. 3226	6960	364
3860	1. 1943	4900	3. 9522	5940	2. 2545	6980	408
3880	1. 2304	4920	3. 9751	5960	2. 1862	7000	475
3900	1. 2687	4940	3. 9954	5980	2. 1178	7020	565
3920	1. 3093	4960	4. 0133	6000	2. 0493	7040	678
3940	1. 3520	4980	4. 0287	6020	1. 9809	7060	813
3960	1. 3968	5000	4. 0415	6040	1. 9126	7080	971
3980	1. 4437	5020	4. 0518	6060	1. 8445	7100	1151
4000	1. 4925	5040	4. 0596	6080	1. 7766	7120	1354
4020	1. 5431	5060	4. 0648	6100	1. 7091	7140	1578
4040	1. 5956	5080	4. 0674	6120	1. 6421	7160	1825
4060	1. 6497	5100	4. 0676	6140	1. 5755	7180	2093
4080	1. 7054	5120	4. 0652	6160	1. 5095	7200	2383
4100	1. 7627	5140	4. 0603	6180	1. 4442	7220	2693
4120	1. 8213	5160	4. 0529	6200	1. 3795	7240	3025
4140	1. 8813	5180	4. 0430	6220	1. 3157	7260	3377
4160	1. 9424	5200	4. 0306	6240	1. 2527	7280	3750
4180	2. 0046	5220	4. 0158	6260	1. 1906	7300	4142
4200	2. 0677	5240	3. 9986	6280	1. 1296	7320	4554
4220	2. 1317	5260	3. 9790	6300	1. 0696		

TABLE X.

Arg. IV.	Equation.
d.	d.
0	3. 1859
20	3. 1740
40	3. 1610
60	3. 1466
80	3. 1310
100	3. 1142
120	3. 0961
140	3. 0769
160	3. 0564
180	3. 0347
200	3. 0119
220	2. 9880
240	2. 9629
260	2. 9367
280	2. 9095
300	2. 8812
320	2. 8518
340	2. 8214
360	2. 7901
380	2. 7578
400	2. 7245
420	2. 6903
440	2. 6553
460	2. 6194
480	2. 5827
500	2. 5453
520	2. 5070
540	2. 4680
560	2. 4283
580	2. 3880
600	2. 3470
620	2. 3054
640	2. 2633
660	2. 2206
680	2. 1774
700	2. 1338
720	2. 0898
740	2. 0453
760	2. 0005
780	1. 9554
800	1. 9101
820	1. 8644
840	1. 8186
860	1. 7726
880	1. 7265
900	1. 6803
920	1. 6341
940	1. 5878
960	1. 5416
980	1. 4954
1000	1. 4493
1020	1. 4034
1040	1. 3576
1060	1. 3121
1080	1. 2668
1100	1. 2218
1120	1. 1771

Inequalities of the Fundamental Argument multiplied by 3—Continued.

TABLE X—Continued.

Arg. IV.	Equation.	Arg. IV.	Equation.	Arg. IV.	Equation.
d.	d.	d.	d.	d.	d.
1120	1. 1771	2240	832	3360	2. 1624
1140	1. 1328	2260	980	3380	2. 2057
1160	1. 0889	2280	1141	3400	2. 2484
1180	1. 0455	2300	1313	3420	2. 2907
1200	1. 0025	2320	1498	3440	2. 3324
1220	9600	2340	1695	3460	2. 3735
1240	9180	2360	1904	3480	2. 4140
1260	8766	2380	2125	3500	2. 4538
1280	8359	2400	2357	3520	2. 4930
1300	7958	2420	2600	3540	2. 5315
1320	7563	2440	2855	3560	2. 5692
1340	7176	2460	3120	3580	2. 6061
1360	6796	2480	3396	3600	2. 6422
1380	6424	2500	3682	3620	2. 6775
1400	6059	2520	3980	3640	2. 7119
1420	5704	2540	4287	3660	2. 7455
1440	5356	2560	4604	3680	2. 7781
1460	5018	2580	4930	3700	2. 8098
1480	4689	2600	5265	3720	2. 8404
1500	4369	2620	5609	3740	2. 8701
1520	4059	2640	5962	3760	2. 8988
1540	3759	2660	6324	3780	2. 9264
1560	3470	2680	6693	3800	2. 9530
1580	3190	2700	7070	3820	2. 9785
1600	2922	2720	7455	3840	3. 0028
1620	2664	2740	7846	3860	3. 0260
1640	2417	2760	8245	3880	3. 0481
1660	2182	2780	8650	3900	3. 0690
1680	1959	2800	9061	3920	3. 0888
1700	1746	2820	9478	3940	3. 1073
1720	1546	2840	9901	3960	3. 1246
1740	1358	2860	1. 0329	3980	3. 1406
1760	1182	2880	1. 0761	4000	3. 1555
1780	1019	2900	1. 1198	4020	3. 1690
1800	867	2920	1. 1639	4040	3. 1814
1820	729	2940	1. 2084	4060	3. 1924
1840	603	2960	1. 2532	4080	3. 2021
1860	490	2980	1. 2983	4100	3. 2105
1880	390	3000	1. 3437	4120	3. 2177
1900	303	3020	1. 3893	4140	3. 2235
1920	228	3040	1. 4350	4160	3. 2280
1940	167	3060	1. 4810	4180	3. 2312
1960	119	3080	1. 5270	4200	3. 2331
1980	85	3100	1. 5731	4220	3. 2337
2000	63	3120	1. 6193	4240	3. 2329
2020	55	3140	1. 6654	4260	3. 2309
2040	60	3160	1. 7116	4280	3. 2275
2060	78	3180	1. 7576	4300	3. 2228
2080	110	3200	1. 8035	4320	3. 2167
2100	155	3220	1. 8493	4340	3. 2094
2120	212	3240	1. 8949	4360	3. 2007
2140	283	3260	1. 9402	4380	3. 1908
2160	367	3280	1. 9854	4400	3. 1796
2180	464	3300	2. 0302	4420	3. 1671
2200	574	3320	2. 0746	4440	3. 1533
2220	697	3340	2. 1187	4460	3. 1383
2240	832	3360	2. 1624	4480	3. 1220

TABLE XI.

Arg. V.	Equation.	Arg. V.	Equation.
d.	d.	d.	d.
0	2. 4187	6000	7933
120	2. 4012	6120	7527
240	2. 3835	6240	7135
360	2. 3655	6360	6758
480	2. 3474	6480	6395
600	2. 3294	6600	6045
720	2. 3115	6720	5707
840	2. 2938	6840	5380
960	2. 2764	6960	5063
1080	2. 2592	7080	4754
1200	2. 2423	7200	4452
1320	2. 2256	7320	4157
1440	2. 2090	7440	3868
1560	2. 1925	7560	3583
1680	2. 1759	7680	3303
1800	2. 1591	7800	3027
1920	2. 1419	7920	2756
2040	2. 1241	8040	2489
2160	2. 1055	8160	2229
2280	2. 0859	8280	1975
2400	2. 0652	8400	1729
2520	2. 0430	8520	1492
2640	2. 0193	8640	1267
2760	1. 9938	8760	1056
2880	1. 9665	8880	859
3000	1. 9371	9000	681
3120	1. 9056	9120	523
3240	1. 8720	9240	387
3360	1. 8362	9360	275
3480	1. 7982	9480	190
3600	1. 7581	9600	134
3720	1. 7159	9720	108
3840	1. 6718	9840	114
3960	1. 6259	9960	152
4080	1. 5785	10080	224
4200	1. 5296	10200	330
4320	1. 4796	10320	470
4440	1. 4287	10440	643
4560	1. 3771	10560	850
4680	1. 3251	10680	1088
4800	1. 2730	10800	1357
4920	1. 2210	10920	1654
5040	1. 1694	11040	1977
5160	1. 1184	11160	2325
5280	1. 0682	11280	2695
5400	1. 0191	11400	3084
5520	9711	11520	3490
5640	9245	11640	3909
5760	8793	11760	4339
5880	8355	11880	4778
6000	7933	12000	5222

Inequalities of the Fundamental Argument multiplied by 3—Continued.

TABLE XI—Continued.

Arg. V.	Equation.	Arg. V.	Equation.
d.	d.	d.	d.
12000	5222 +449	18000	2. 3680 +133
12120	5671 450	18120	2. 3813 126
12240	6121 449	18240	2. 3939 118
12360	6570 448	18360	2. 4057 113
12480	7018 445	18480	2. 4170 109
12600	7463 441	18600	2. 4279 104
12720	7904 436	18720	2. 4383 102
12840	8340 432	18840	2. 4485 99
12960	8772 426	18960	2. 4584 97
13080	9198 422	19080	2. 4681 94
13200	9620 417	19200	2. 4775 93
13320	1. 0037 413	19320	2. 4868 89
13440	1. 0450 410	19440	2. 4957 87
13560	1. 0860 408	19560	2. 5044 81
13680	1. 1268 407	19680	2. 5125 77
13800	1. 1675 407	19800	2. 5202 70
13920	1. 2082 407	19920	2. 5272 62
14040	1. 2489 409	20040	2. 5334 54
14160	1. 2898 410	20160	2. 5388 43
14280	1. 3308 413	20280	2. 5431 32
14400	1. 3721 417	20400	2. 5463 19
14520	1. 4138 419	20520	2. 5482 + 6
14640	1. 4557 422	20640	2. 5488 + 9
14660	1. 4979 425	20760	2. 5479 23
14880	1. 5404 427	20880	2. 5456 40
15000	1. 5831 429	21000	2. 5416 54
15120	1. 6260 428	21120	2. 5362 71
15240	1. 6688 428	21240	2. 5291 86
15360	1. 7116 425	21360	2. 5205 101
15480	1. 7541 421	21480	2. 5104 115
15600	1. 7962 416	21600	2. 4989 128
15720	1. 8378 408	21720	2. 4861 139
15840	1. 8786 400	21840	2. 4722 150
15960	1. 9186 389	21960	2. 4572 160
16080	1. 9575 377	22080	2. 4412 166
16200	1. 9952 364	22200	2. 4246 172
16320	2. 0316 349	22320	2. 4074 177
16440	2. 0665 333	22440	2. 3897
16560	2. 0998 316		
16680	2. 1314 299		
16800	2. 1613 280		
16920	2. 1893 263		
17040	2. 2156 246		
17160	2. 2402 227		
17280	2. 2629 211		
17400	2. 2840 195		
17520	2. 3035 181		
17640	2. 3216 166		
17760	2. 3382 155		
17880	2. 3537 143		
18000	2. 3680		

TABLE XII.

Arg. VI.	Equation.	Arg. VI.	Equation.	Arg. VI.	Equation.
d.	d.	d.	d.	d.	d.
0	3733 -304	1880	5121 +369	3760	1. 6335 - 99
40	3429 294	1920	5490 375	3800	1. 6236 116
80	3135 284	1960	5865 380	3840	1. 6120 132
120	2851 273	2000	6245 386	3880	1. 5988 147
160	2578 262	2040	6631 390	3920	1. 5841 162
200	2316 250	2080	7021 392	3960	1. 5679 176
240	2066 238	2120	7413 395	4000	1. 5503 192
280	1828 225	2160	7808 396	4040	1. 5311 205
320	1603 212	2200	8204 396	4080	1. 5106 219
360	1391 198	2240	8600 395	4120	1. 4887 231
400	1193 184	2280	8995 391	4160	1. 4656 245
440	1009 170	2320	9388 388	4200	1. 4411 256
480	839 155	2360	9779 383	4240	1. 4155 268
520	684 139	2400	1. 0167 378	4280	1. 3887 279
560	545 124	2440	1. 0550 371	4320	1. 3608 289
600	421 108	2480	1. 0928 365	4360	1. 3319 299
640	313 92	2520	1. 1299 356	4400	1. 3020 308
680	221 75	2560	1. 1664 348	4440	1. 2712 317
720	146 58	2600	1. 2020 338	4480	1. 2395 326
760	88 42	2640	1. 2368 328	4520	1. 2069 332
800	46 24	2680	1. 2706 317	4560	1. 1737 339
840	22 7	2720	1. 3034 305	4600	1. 1398 346
880	15 + 10	2760	1. 3351 293	4640	1. 1052 350
920	25 + 28	2800	1. 3656 280	4680	1. 0702 356
960	53 46	2840	1. 3949 266	4720	1. 0346 359
1000	99 63	2880	1. 4229 252	4760	9987 366
1040	162 81	2920	1. 4495 237	4800	9625 367
1080	243 98	2960	1. 4747 223	4840	9259 367
1120	341 115	3000	1. 4984 206	4880	8892 368
1160	456 132	3040	1. 5207 191	4920	8524 369
1200	588 150	3080	1. 5413 174	4960	8155 368
1240	738 166	3120	1. 5604 158	5000	7787 366
1280	904 183	3160	1. 5778 141	5040	7420 363
1320	1087 199	3200	1. 5936 124	5080	7054 360
1360	1286 215	3240	1. 6077 107	5120	6691 356
1400	1501 230	3280	1. 6201 90	5160	6331 351
1440	1731 245	3320	1. 6308 71	5200	5975 346
1480	1976 260	3360	1. 6398 55	5240	5624 341
1520	2236 274	3400	1. 6469 37	5280	5278 337
1560	2510 286	3440	1. 6524 19	5320	4937 333
1600	2796 300	3480	1. 6561 2	5360	4604 327
1640	3096 311	3520	1. 6580 + 2	5400	4277 318
1680	3407 323	3560	1. 6582 - 15	5440	3959 310
1720	3730 334	3600	1. 6567 33	5480	3640 301
1760	4064 344	3640	1. 6534 49	5520	3348 291
1800	4408 352	3680	1. 6485 83	5560	3057 281
1840	4760 + 361	3720	1. 6418	5600	2776
1880	5121	3760	1. 6335		

Inequalities of the Fundamental Argument multiplied by 3—Continued.

TABLE XIII.

Arg. VII.	Equation.	Arg. VII.	Equation.
d.		d.	
0	1620	1600	1703
40	1502 - 118	1640	1826 + 123
80	1383	1680	1947
120	1267	1720	2065
160	1152	1760	2181
200	1040	1800	2292
240	931	1840	2399
280	827	1880	2501
320	727	1920	2596
360	633	1960	2685
400	545	2000	2766
440	463	2040	2839
480	388	2080	2905
520	321	2120	2961
560	263	2160	3008
600	212	2200	3046
640	171	2240	3075
680	138	2280	3094
720	115	2320	3103 + 9
760	102	2360	3102
800	98	2400	3091
840	104 + 6	2440	3071
880	120	2480	3041
920	145	2520	3002
960	180	2560	2954
1000	225	2600	2897
1040	278	2640	2833
1080	341	2680	2760
1120	411	2720	2680
1160	490	2760	2594
1200	576	2800	2501
1240	669	2840	2403
1280	769	2880	2300
1320	874	2920	2193
1360	984	2960	2082
1400	1098	3000	1967
1440	1215	3040	1851
1480	1335	3080	1733
1520	1457	3120	1615
1560	1580	3160	1496
1600	1703 + 123	3200	1378 - 118

TABLE XIV.

Arg. VIII.	Equation.	Arg. VIII.	Equation.
d.		d.	
0	262	10800	2660
240	315 + 53	11040	2601 - 59
480	375	11280	2537
720	440	11520	2467
960	511	11760	2391
1200	587	12000	2311
1440	667	12240	2227
1680	752	12480	2138
1920	840	12720	2046
2160	932	12960	1950
2400	1027	13200	1852
2640	1123	13440	1752
2880	1222	13680	1650
3120	1321	13920	1548
3360	1422	14160	1445
3600	1523	14400	1341
3840	1623	14640	1239
4080	1723	14880	1138
4320	1821	15120	1038
4560	1918	15360	941
4800	2012	15600	847
5040	2103	15840	756
5280	2192	16080	669
5520	2277	16320	587
5760	2357	16560	510
6000	2433	16800	438
6240	2505	17040	371
6480	2571	17280	311
6720	2632	17520	257
6960	2687	17760	210
7200	2736	18000	170
7440	2779	18240	137
7680	2815	18480	112
7920	2845	18720	94
8160	2867	18960	83
8400	2884	19200	80
8640	2893	19440	85 + 5
8880	2895 + 2	19680	97
9120	2890	19920	117
9360	2877	20160	144
9600	2858	20400	178
9840	2832	20640	219
10080	2799	20880	267
10320	2759	21120	321
10560	2713	21360	381
10800	2660 - 53	21600	448 + 67

The quantities tabulated are in units of the fourth decimal of the day.

Inequalities of the Fundamental Argument multiplied by 3—Continued.

TABLE XV.

Arg. IX.	Equation.	Arg. IX.	Equation.
d.		d.	
0	2737 +154	5520	73 + 49
120	2891 +139	5640	122 + 72
240	3030 +120	5760	194 + 95
360	3150 +100	5880	289 + 115
480	3250 +77	6000	404 + 133
600	3327 +53	6120	537 + 147
720	3380 +28	6240	684 + 158
840	3408 +3	6360	842 + 165
960	3411 +19	6480	1007 + 166
1080	3392 +42	6600	1173 + 164
1200	3350 +61	6720	1337 + 158
1320	3289 +79	6840	1495 + 146
1440	3210 +94	6960	1641 + 130
1560	3116 +105	7080	1771 + 111
1680	3011 +113	7200	1882 + 90
1800	2898 +119	7320	1972 + 67
1920	2779 +122	7440	2039 + 41
2040	2657 +122	7560	2080 + 17
2160	2535 +122	7680	2097 + 8
2280	2413 +118	7800	2089 + 31
2400	2295 +115	7920	2058 + 50
2520	2180 +111	8040	2008 + 68
2640	2069 +106	8160	1940 + 81
2760	1963 +102	8280	1859 + 90
2880	1861 +100	8400	1769 + 94
3000	1761 +97	8520	1675 + 94
3120	1664 +96	8640	1581 + 88
3240	1568 +96	8760	1493 + 77
3360	1472 +97	8880	1416 + 64
3480	1375 +99	9000	1352 + 45
3600	1276 +102	9120	1307 + 24
3720	1174 +105	9240	1283 + 0
3840	1069 +108	9360	1283 + 24
3960	961 +110	9480	1307 + 50
4080	851 +111	9600	1357 + 75
4200	740 +111	9720	1432 + 98
4320	629 +108	9840	1530 + 120
4440	521 +104	9960	1650 + 139
4560	417 +96	10080	1789 + 153
4680	321 +86	10200	1942 + 165
4800	235 +74	10320	2107 + 170
4920	161 +58	10440	2277 + 173
5040	103 +39	10560	2450 + 169
5160	64 +20	10680	2619 + 162
5280	44 +3	10800	2781 + 149
5400	47 +26	10920	2930 + 135
5520	73	11040	3065

TABLE XVI.

Arg. X.	Equation.
d.	
0	64 +20
40	84 +25
80	109 +28
120	137 +33
160	170 +35
200	205 +38
240	243 +40
280	283 +41
320	324 +42
360	366 +43
400	409 +43
440	452 +41
480	493 +41
520	534 +38
560	572 +36
600	608 +33
640	641 +30
680	671 +27
720	698 +22
760	720 +18
800	738 +13
840	751 +9
880	760 +5
920	765 +1
960	764
1000	759 +5
1040	749 +10
1080	735 +14
1120	716 +19
1160	693 +23
1200	667 +26
1240	637 +30
1280	604 +33
1320	568 +36
1360	530 +38
1400	490 +40
1440	449 +41
1480	407 +42
1520	365 +42
1560	323 +40
1600	283 +40
1640	243 +37
1680	206 +35
1720	171 +32
1760	139 +28
1800	111 +25
1840	86 +21
1880	65 +16
1920	49 +11
1960	38 +7
2000	31 +1
2040	30 +3
2080	33 +9
2120	42 +13
2160	55 +18
2200	73 +23
2240	96

TABLE XVII.

Arg. XI.	Equation.
d.	
0	276 +40
80	316 +40
160	356 +38
240	394 +37
320	431 +34
400	465 +31
480	496 +28
560	524 +23
640	547 +18
720	565 +14
800	579 +8
880	587 +3
960	590 +2
1040	588 +8
1120	580 +13
1200	567 +18
1280	549 +23
1360	526 +27
1440	499 +31
1520	468 +34
1600	434 +36
1680	398 +38
1760	360 +40
1840	320 +40
1920	280 +39
2000	241 +38
2080	203 +37
2160	166 +34
2240	132 +31
2320	101 +27
2400	74 +23
2480	51 +18
2560	33 +13
2640	20 +8
2720	12 +3
2800	9 +3
2880	12 +9
2960	21 +13
3040	34 +19
3120	53 +23
3200	76 +27
3280	103 +32
3360	135 +34
3440	169 +36
3520	205 +39
3600	244 +39
3680	283 +39
3760	323 +40
3840	363 +40
3920	401 +36
4000	437

TABLE XVIII.

Arg. XII.	Equation.
d.	
0	579 + 2
40	581 + 3
80	578 + 7
120	571 + 11
160	560 + 15
200	545 + 20
240	525 + 23
280	502 + 26
320	476 + 30
360	446 + 31
400	415 + 34
440	381 + 34
480	347 + 36
520	311 + 36
560	275 + 35
600	240 + 35
640	205 + 33
680	172 + 31
720	141 + 28
760	113 + 26
800	87 + 22
840	65 + 18
880	47 + 14
920	33 + 10
960	23 + 5
1000	18 + 1
1040	17 + 5
1080	22 + 8
1120	30 + 13
1160	43 + 17
1200	60 + 21
1240	81 + 25
1280	106 + 28
1320	134 + 30
1360	164 + 33
1400	197 + 34
1440	231 + 35
1480	266 + 36
1520	302 + 36
1560	338 + 35
1600	373 + 34
1640	407 + 32
1680	439 + 30
1720	469 + 27
1760	496 + 24
1800	520 + 20
1840	540 + 17
1880	557 + 12
1920	569 + 8
1960	577 + 4
2000	581 + 1
2040	580 + 5
2080	575

The quantities tabulated are in units of the fourth decimal of the day.

Inequalities of the Fundamental Argument multiplied by 3—Continued.

TABLE XIX.

Arg. XIII.	Equation.	Arg. XIII.	Equation.
d.		d.	
0	343— 3	1400	49+ 5
40	340— 4	1440	54+ 6
80	336— 6	1480	60+ 8
120	330— 6	1520	68+ 8
160	324— 8	1560	76+ 10
200	316— 8	1600	86+ 11
240	308— 9	1640	97+ 12
280	299— 10	1680	109+ 12
320	289— 11	1720	121+ 14
360	278— 11	1760	135+ 14
400	267— 12	1800	149+ 14
440	255— 12	1840	163+ 14
480	243— 13	1880	177+ 15
520	230— 13	1920	192+ 15
560	217— 13	1960	207+ 14
600	204— 14	2000	221+ 14
640	190— 14	2040	235+ 14
680	176— 13	2080	249+ 13
720	163— 13	2120	262+ 13
760	150— 13	2160	275+ 11
800	137— 13	2200	286+ 11
840	124— 12	2240	297+ 10
880	112— 12	2280	307+ 9
920	100— 10	2320	316+ 8
960	90— 10	2360	324+ 7
1000	80— 9	2400	331+ 5
1040	71— 7	2440	336+ 5
1080	64— 7	2480	341+ 3
1120	57— 5	2520	344+ 2
1160	52— 4	2560	346+ 1
1200	48— 3	2600	347+ 0
1240	45— 1	2640	347— 2
1280	44— 0	2680	345— 2
1320	44+ 2	2720	343— 4
1360	46+ 3	2760	339— 4
1400	49+ 3	2800	335— 4

TABLE XX.

Arg. XIV.	Equation.
d.	
0	72+ 8
80	80+ 11
160	91+ 14
240	105+ 18
320	120+ 19
400	138+ 19
480	157+ 20
560	176+ 20
640	196+ 20
720	216+ 19
800	235+ 18
880	253+ 16
960	269+ 14
1040	283+ 12
1120	295+ 9
1200	304+ 6
1280	310+ 3
1360	313+ 0
1440	313— 4
1520	309— 6
1600	303— 9
1680	294— 12
1760	282— 15
1840	267— 17
1920	250— 18
2000	232— 20
2080	212— 20
2160	192— 21
2240	171— 20
2320	151— 19
2400	132— 17
2480	115— 16
2560	99— 13
2640	86— 10
2720	76— 7
2800	69— 3
2880	66— 1
2960	65— 3
3040	68+ 6
3120	74+ 10
3200	84+ 10

TABLE XXI.

Arg. XV.	Equation.
d.	
0	174— 6
40	168— 7
80	161— 8
120	153— 10
160	143— 10
200	133— 12
240	121— 11
280	110— 12
320	98— 12
360	86— 11
400	75— 11
440	64— 11
480	53— 9
520	44— 8
560	36— 6
600	30— 5
640	25— 4
680	21— 1
720	20— 0
760	20+ 2
800	22+ 3
840	25+ 6
880	31+ 7
920	38+ 8
960	46+ 10
1000	56+ 11
1040	67+ 11
1080	78+ 12
1120	90+ 12
1160	102+ 13
1200	115+ 11
1240	126+ 12
1280	138+ 10
1320	148+ 9
1360	157+ 8
1400	165+ 7
1440	172+ 4
1480	176+ 3
1520	179+ 2
1560	181+ 1
1600	180+ 2
1640	178+ 4
1680	174+ 6
1720	168+ 8
1760	160+ 8

TABLE XXII.

Arg. XVI.	Equation.
d.	
0	77— 9
80	68— 8
160	60— 8
240	52— 6
320	46— 7
400	39— 5
480	34— 4
560	30— 4
640	26— 2
720	24— 2
800	22— 0
880	22+ 1
960	23+ 2
1040	25+ 3
1120	28+ 3
1200	31+ 5
1280	36+ 6
1360	42+ 7
1440	49+ 7
1520	56+ 8
1600	64+ 8
1680	72+ 9
1760	81+ 9
1840	90+ 9
1920	99+ 9
2000	108+ 9
2080	117+ 9
2160	126+ 8
2240	134+ 8
2320	142+ 8
2400	150+ 6
2480	156+ 6
2560	162+ 5
2640	167+ 4
2720	171+ 4
2800	175+ 2
2880	177+ 1
2960	178+ 0
3040	178— 1
3120	177— 3
3200	174— 3
3280	171— 4
3360	167— 5
3440	162— 6
3520	156— 7
3600	149— 7
3680	142— 8
3760	134— 9
3840	125— 9
3920	116— 9
4000	107— 9
4080	98— 9
4160	89— 9
4240	80— 9
4320	71— 8
4400	63— 8

The quantities tabulated are in units of the fourth decimal of the day.

Inequalities of the Fundamental Argument multiplied by 3—Continued.

TABLE XXIII.

Arg. XVII.	Equa.
d.	
0	82
240	88
480	94
720	99
960	103
1200	107
1440	110
1680	112
1920	113
2160	113
2400	112
2640	110
2880	108
3120	104
3360	100
3600	96
3840	90
4080	84
4320	78
4560	71
4800	64
5040	57
5280	50
5520	44
5760	37
6000	31
6240	26
6480	21
6720	16
6960	13
7200	10
7440	8
7680	7
7920	7
8160	8
8400	10
8640	12
8880	16
9120	20
9360	25
9600	30
9840	36
10080	42
10320	49
10560	56
10800	63
11040	70
11280	77
11520	83
11760	89
12000	95

TABLE XXIV.

Arg. XVIII.	Equa.
d.	
0	14
80	11
160	10
240	10
320	11
400	13
480	16
560	21
640	27
720	33
800	40
880	48
960	56
1040	64
1120	72
1200	79
1280	87
1360	93
1440	99
1520	103
1600	107
1680	109
1760	110
1840	110
1920	109
2000	106
2080	102
2160	97
2240	91
2320	85
2400	77
2480	70
2560	62
2640	54
2720	46
2800	38
2880	31
2960	25
3040	20
3120	15
3200	12
3280	10
3360	9

TABLE XXV.

Arg. XIX.	Equa.
d.	
0	42
120	34
240	27
360	20
480	14
600	9
720	6
840	4
960	3
1080	4
1200	6
1320	9
1440	14
1560	20
1680	26
1800	34
1920	42
2040	50
2160	58
2280	66
2400	74
2520	80
2640	86
2760	91
2880	94
3000	96
3120	97
3240	96
3360	94
3480	90
3600	85
3720	80
3840	73
3960	65
4080	57
4200	49
4320	41
4440	33
4560	26
4680	19
4800	13

TABLE XXVI.

Arg. XX.	Equa.	Arg. XX.
d.	d.	d.
0—18	17	227—255
19—29	16	217—226
30—36	15	209—216
37—43	14	202—208
44—49	13	196—201
50—55	12	190—195
56—60	11	185—189
61—65	10	180—184
66—71	9	174—179
72—76	8	168—173
77—82	7	162—167
83—89	6	156—161
90—97	5	148—155
98—108	4	137—147
109—136	3	

TABLE XXVII.

Arg. XXI.	Equa.	Arg. XXI.
d.	d.	d.
	9	388—399
	8	345—387
0—0	9	332—344
1—9	10	323—331
10—17	11	315—322
18—24	12	308—314
25—30	13	302—307
31—36	14	296—301
37—42	15	291—295
43—48	16	285—290
49—53	17	280—284
54—58	18	275—279
59—64	19	269—274
65—69	20	264—268
70—74	21	259—263
75—79	22	253—258
80—85	23	248—252
86—90	24	243—247
91—96	25	237—242
97—102	26	231—236
103—108	27	225—230
109—115	28	218—224
116—123	29	210—217
124—132	30	201—209
133—144	31	188—200
145—187	32	

The quantities tabulated are in units of the fourth decimal of the day.

Inequalities of the Fundamental Argument multiplied by 3—Continued.

TABLE XXVIII.

A.	d. o	d. 120	d. 240	d. 360	d. 480	d. 600	d. 720	d. 840	d. 960	d. 1080	d. 1200	d. 1320	d. 1440	d. 1560	d. 1680	d. 1800	d. 1920	d. 2040	d. 2160
0	201	169	134	106	88	84	90	105	125	147	170	192	214	231	239	236	218	189	154
1	201	162	124	93	74	69	79	99	126	152	175	194	211	224	233	236	228	211	181
2	197	158	120	87	66	61	71	95	127	158	184	203	214	220	225	228	229	223	209
3	192	156	119	86	63	56	66	92	129	166	198	216	224	223	219	218	220	223	222
4	186	155	120	87	63	55	64	91	131	174	212	235	241	233	219	208	205	211	220
5	179	153	122	91	67	57	64	91	132	180	226	256	265	253	229	204	190	191	204
6	172	152	126	97	74	63	67	91	133	185	238	276	291	281	249	211	181	169	178
7	166	155	134	109	86	73	74	94	133	187	245	293	318	314	280	231	183	153	150
8	163	161	146	126	104	89	85	100	135	188	249	305	342	348	319	264	201	150	127
9	165	170	164	149	129	112	104	112	141	188	249	311	358	378	360	307	234	164	117
10	168	182	185	177	160	142	130	131	150	189	246	310	367	400	397	353	279	195	127
11	172	195	207	207	197	179	163	156	165	193	242	303	365	410	424	396	329	239	153
12	175	205	227	237	233	219	201	186	185	201	238	292	353	407	437	428	376	290	193
13	176	211	241	261	266	258	241	221	208	212	235	277	333	391	433	444	412	338	241
14	175	213	249	278	293	292	278	255	235	226	233	262	308	363	413	440	429	376	288
15	173	211	251	287	310	317	309	288	261	242	235	247	280	327	378	417	427	396	326
16	173	208	249	288	319	334	332	314	286	258	238	235	252	287	334	378	405	397	349
17	177	207	246	285	320	341	346	333	306	273	243	226	226	247	285	329	365	377	354
18	185	210	244	282	317	342	352	345	321	286	249	219	205	211	236	274	315	342	341
19	198	217	246	280	314	340	353	350	330	295	255	216	189	180	191	220	259	296	313
20	214	228	252	281	311	336	351	351	336	302	261	216	179	157	154	171	204	244	275
21	228	240	260	285	311	334	348	350	338	307	266	218	174	141	126	131	155	192	230
22	238	249	267	289	311	331	345	348	337	309	270	222	173	133	107	100	114	145	185
23	241	252	269	290	310	328	340	343	334	310	273	226	176	130	96	79	83	106	144
24	234	246	264	284	304	321	332	335	328	307	274	229	180	132	92	68	62	77	108
25	221	232	250	270	290	308	319	323	316	300	270	230	184	136	94	64	51	57	81
26	202	212	228	249	269	287	299	305	300	287	262	227	186	142	100	68	49	48	64
27	183	190	203	222	242	260	273	280	277	268	248	218	185	146	108	76	55	49	58
28	167	170	180	195	213	229	242	250	249	243	227	205	179	148	117	89	69	60	64
29	158	157	162	173	186	200	211	218	218	214	203	187	169	147	124	103	87	79	81
30	157	152	153	159	167	177	184	188	188	184	176	165	154	141	128	117	108	105	107
31	161	156	155	156	159	163	166	165	162	156	149	141	136	132	129	128	130	133	140
32	170	165	163	162	162	161	158	153	144	135	127	119	117	119	125	135	148	162	177
33	178	176	176	176	175	171	164	153	139	124	112	102	100	105	118	137	161	186	211
34	181	184	189	192	193	189	180	165	146	124	108	93	87	92	108	134	166	203	239
35	179	187	197	206	211	211	202	186	163	137	114	94	83	84	98	127	165	210	256
36	172	182	197	212	224	230	226	212	189	160	131	105	88	82	92	118	157	207	261
37	162	172	190	210	230	243	247	239	219	190	159	128	103	89	92	111	148	197	256
38	152	161	178	201	226	247	260	261	248	225	194	159	129	108	100	111	139	184	241
39	148	152	165	187	214	241	263	274	271	256	230	197	164	136	120	119	139	172	222
40	154	150	157	173	199	228	256	277	286	282	263	236	203	174	150	139	144	166	205
41	170	160	158	165	184	212	242	270	290	298	291	274	245	217	189	169	162	170	195
42	198	182	170	167	176	196	224	255	283	302	309	304	285	262	234	208	191	185	195
43	234	215	195	180	176	185	206	235	266	295	314	322	317	302	279	252	228	212	207
44	273	254	228	204	187	182	192	214	244	277	306	328	336	334	319	297	270	246	228
45	310	294	267	236	207	189	184	194	218	250	286	318	341	352	349	335	311	283	257
46	341	331	305	272	235	204	184	180	192	219	256	295	329	354	365	361	345	318	288
47	361	358	338	306	265	225	192	173	171	187	220	261	303	340	364	374	367	346	315
48	370	374	362	334	295	249	206	173	157	159	183	220	265	310	347	369	374	361	334
49	366	377	374	354	318	273	224	181	150	138	149	178	221	270	315	348	366	363	343
50	353	369	373	362	335	295	245	195	154	128	124	141	177	224	274	316	344	352	340
51	334	351	362	359	341	308	264	213	165	129	111	115	139	180	229	276	311	329	326
52	310	328	341	345	337	314	278	232	184	140	110	100	111	142	186	233	273	296	304
53	286	300	315	323	323	312	287	249	204	159	122	100	98	117	151	194	234	263	278
54	262	271	284	295	301	299	287	260	224	183	142	114	99	105	128	162	200	231	249
55	239	242	251	261	272	278	277	263	238	205	168	136	113	108	118	142	173	202	222
56	219	215	218	225	237	248	256	255	243	223	194	164	136	123	122	134	155	180	198
57	201	189	186	189	199	212	227	236	238	230	213	190	165	147	137	138	149	165	180
58	185	168	157	155	161	173	191	208	221	227	223	210	192	174	159	152	153	160	169
59	172	150	134	127	127	136	153	173	194	211	221	222	213	200	185	172	166	164	165
60	162	137	117	104	99	103	116	137	161	187	208	221	225	221	210	196	185	176	169

The horizontal argument of this table is Arg. I.

Inequalities of the Fundamental Argument multiplied by 3—Continued.

TABLE XXVIII—Continued.

d. 2280	d. 2400	d. 2520	d. 2640	d. 2760	d. 2880	d. 3000	d. 3120	d. 3240	d. 3360	d. 3480	d. 3600	d. 3720	d. 3840	d. 3960	d. 4080	d. 4200	d. 4320	d. 4440	A
122	190	90	95	108	126	144	161	176	189	200	213	232	256	284	315	342	361	369	0
154	130	115	112	121	135	153	171	186	200	211	222	237	256	279	308	335	357	370	1
188	166	149	142	145	156	171	187	202	215	225	234	243	257	274	297	321	344	361	2
214	201	187	179	178	186	197	211	224	235	243	248	253	259	270	286	305	325	343	3
226	226	221	216	215	220	228	239	250	259	264	267	266	265	268	275	288	303	320	4
221	236	244	247	249	254	260	269	277	283	286	286	281	274	269	267	271	280	293	5
202	229	251	267	276	283	289	295	302	305	306	303	295	283	271	261	256	258	265	6
171	206	242	271	291	304	312	318	322	323	321	316	305	291	274	256	243	237	236	7
139	173	218	260	293	315	327	334	336	335	331	324	311	294	273	251	231	217	209	8
111	136	184	237	282	315	333	342	344	341	335	325	311	292	270	244	220	199	184	9
96	105	148	205	261	304	332	345	347	343	333	320	305	286	263	236	208	183	162	10
97	84	113	170	233	288	324	343	347	341	329	313	295	274	251	226	197	170	144	11
116	78	88	136	202	264	311	337	345	339	324	304	283	260	238	214	187	159	134	12
148	87	74	107	168	235	292	327	340	336	319	295	271	246	223	201	177	152	128	13
189	110	73	86	137	206	269	313	333	333	314	288	260	232	208	187	168	147	127	14
231	141	83	74	110	175	241	295	323	327	311	282	251	220	194	174	158	144	131	15
267	175	103	72	88	142	211	270	307	318	305	276	242	208	179	159	147	140	135	16
292	208	129	80	76	115	178	242	286	305	296	269	233	195	164	144	134	133	138	17
303	235	157	96	73	94	147	210	260	286	284	260	223	183	148	125	117	122	135	18
299	252	183	118	80	82	121	178	232	265	270	249	212	170	131	105	97	105	125	19
282	258	206	144	97	82	105	153	205	243	254	238	203	159	116	86	74	83	107	20
255	254	222	172	122	94	100	136	183	223	241	231	198	152	106	71	53	59	85	21
221	240	229	196	151	116	108	130	170	209	232	228	199	153	103	62	37	37	60	22
185	218	228	213	179	144	127	136	166	203	229	232	208	164	113	65	32	23	40	23
150	192	218	222	203	174	152	151	172	204	233	242	225	186	134	82	41	22	28	24
119	164	201	221	218	199	178	170	183	210	240	256	248	217	168	114	66	36	31	25
96	138	180	212	223	216	200	190	196	218	248	271	274	253	211	158	106	67	50	26
83	119	161	197	220	224	215	205	207	224	253	281	295	287	256	209	158	113	85	27
81	110	147	183	210	223	220	213	212	224	251	283	308	314	297	261	215	168	133	28
93	114	144	175	202	217	219	214	210	218	241	274	307	328	328	306	270	227	188	29
117	132	154	177	199	213	216	210	203	206	224	255	294	324	342	336	314	281	243	30
151	164	179	194	208	215	215	206	196	192	202	229	268	307	337	349	342	323	292	31
192	204	217	225	230	229	221	207	191	179	181	200	235	277	316	344	353	348	328	32
234	251	263	267	265	255	239	217	192	173	165	174	202	241	284	322	347	356	349	33
271	296	311	316	309	292	267	236	204	174	157	155	173	205	247	289	325	347	354	34
298	333	356	363	356	335	303	264	223	186	158	146	153	176	212	253	293	325	343	35
313	358	389	403	399	378	342	297	249	203	168	147	145	158	185	221	260	295	328	36
314	367	407	430	432	413	377	328	276	224	183	156	146	151	169	197	230	264	294	37
302	360	407	438	448	435	402	354	299	244	198	167	153	153	164	184	209	237	265	38
281	341	393	430	447	441	413	368	313	257	209	177	161	160	168	181	198	217	238	39
257	313	365	407	430	431	410	368	316	261	213	180	164	165	175	187	197	207	218	40
235	283	332	373	400	407	392	357	308	253	207	175	162	166	180	195	205	207	207	41
220	256	297	335	363	373	364	335	291	240	193	161	150	159	180	202	215	214	205	42
215	237	266	298	323	335	330	307	267	220	174	143	132	144	173	204	225	227	212	43
222	227	243	265	285	296	295	276	242	198	154	122	110	124	158	201	232	242	227	44
237	227	229	239	251	260	261	246	217	178	136	103	90	102	139	191	235	257	249	45
258	235	222	220	224	229	229	218	195	162	123	90	73	82	118	175	232	270	273	46
279	246	221	207	201	202	201	194	177	150	115	83	63	67	99	157	223	277	297	47
297	258	224	198	183	178	176	172	161	142	113	83	62	60	84	138	209	277	316	48
308	267	226	192	168	157	153	151	147	135	114	89	67	59	75	121	191	268	325	49
311	270	226	186	156	138	132	131	132	129	117	98	78	66	73	107	171	250	323	50
304	267	224	180	145	122	112	113	119	123	120	109	93	78	77	98	150	226	307	51
290	259	218	174	135	109	96	97	107	117	124	122	111	97	89	96	133	197	279	52
271	247	211	168	129	100	85	85	97	114	130	136	133	120	107	103	122	169	242	53
249	232	201	163	125	95	79	78	92	114	137	153	157	149	134	119	121	147	203	54
227	216	191	158	123	95	79	79	93	118	149	173	185	183	168	147	132	136	171	55
206	199	181	153	123	98	84	84	100	128	163	196	217	222	209	185	157	141	150	56
188	184	171	149	124	103	91	94	112	141	181	221	250	263	255	232	196	162	147	57
174	172	161	144	124	108	101	106	125	158	200	245	282	304	304	284	245	199	162	58
166	162	153	140	124	112	109	116	138	173	218	267	311	341	349	336	299	247	194	59
164	157	148	136	124	115	115	125	149	185	230	283	331	369	386	381	349	298	237	60

The quantities tabulated are in units of the fourth decimal of the day.

Inequalities of the Fundamental Argument multiplied by 3—Continued.

TABLE XXVIII—Continued.

A.	d. o	d. 120	d. 240	d. 360	d. 480	d. 600	d. 720	d. 840	d. 960	d. 1080	d. 1200	d. 1320	d. 1440	d. 1560	d. 1680	d. 1800	d. 1920	d. 2040	d. 2160
60	162	137	117	104	99	103	116	137	161	187	208	221	225	221	210	196	185	176	169
61	155	130	108	91	81	79	87	104	128	157	186	211	227	233	231	221	209	195	182
62	150	129	108	90	76	68	69	80	100	127	160	192	219	237	245	243	233	218	202
63	148	132	115	98	83	72	66	70	82	105	135	170	204	232	251	259	256	245	227
64	145	137	127	116	103	90	79	75	79	94	118	150	186	220	249	267	274	270	255
65	139	140	141	138	131	121	107	97	93	97	110	136	168	205	240	268	285	290	282
66	129	140	152	161	163	159	148	134	122	116	117	132	156	190	226	260	287	302	304
67	113	132	156	178	194	199	194	182	166	150	139	139	152	177	210	246	279	304	317
68	91	116	151	187	218	237	241	234	217	195	174	160	159	170	194	227	263	295	318
69	65	93	137	185	231	265	283	285	271	247	218	192	176	172	183	208	241	276	307
70	40	67	115	172	231	281	315	329	323	301	268	232	203	183	178	191	217	250	284
71	20	43	89	152	220	284	333	361	367	350	318	277	237	203	183	180	194	220	254
72	12	26	67	128	201	275	338	380	398	391	364	322	275	230	196	178	177	193	221
73	18	21	51	107	179	257	329	384	415	420	401	363	311	261	216	184	169	172	192
74	41	32	49	93	159	236	312	377	419	434	426	394	347	293	240	198	170	161	169
75	80	59	62	93	146	216	291	359	409	435	436	413	372	320	265	217	180	159	156
76	132	101	91	106	144	202	270	336	389	423	432	418	385	338	286	235	193	166	154
77	190	153	132	133	155	197	252	311	363	400	416	410	384	344	297	249	206	177	159
78	246	209	181	169	176	202	242	289	335	371	389	389	370	338	298	255	215	185	167
79	295	261	231	211	204	214	239	272	308	339	356	359	344	318	285	249	214	189	171
80	329	304	276	252	236	233	242	261	284	307	320	322	311	289	260	231	203	183	170
81	346	333	312	288	267	254	250	255	266	278	285	284	273	253	230	205	183	168	161
82	347	346	334	314	292	273	260	253	252	254	253	248	236	217	196	174	156	145	143
83	330	343	342	330	310	289	270	254	243	235	227	217	203	184	163	143	128	119	120
84	305	328	337	333	319	299	277	257	238	221	207	193	176	157	137	117	103	95	98
85	276	305	321	326	319	303	281	258	235	213	194	176	157	138	118	100	86	79	81
86	252	277	299	310	310	299	280	259	233	208	185	165	145	126	109	92	79	72	72
87	227	251	272	287	292	288	274	254	230	205	180	159	139	122	107	93	82	76	75
88	214	229	245	260	269	269	261	245	225	201	178	156	137	121	110	100	93	88	88
89	210	214	221	231	240	245	242	231	216	197	175	156	138	124	115	110	107	107	109
90	215	209	203	204	209	215	216	212	203	190	173	156	140	129	123	121	123	127	133
91	227	213	194	182	179	181	185	187	185	179	168	156	144	135	130	132	138	147	157
92	243	225	196	170	153	148	151	157	162	164	161	156	149	142	139	142	151	162	177
93	259	245	210	169	136	119	118	125	135	146	152	155	154	152	150	153	163	176	193
94	274	269	234	182	133	100	88	92	107	125	140	153	160	163	165	168	176	188	205
95	284	294	266	210	146	96	69	65	79	103	127	151	168	178	183	187	193	202	217
96	287	316	301	248	176	109	64	48	56	82	113	147	174	193	205	211	215	221	230
97	281	330	335	294	220	140	77	44	42	64	100	142	179	209	229	239	242	245	248
98	266	331	360	338	273	187	108	57	40	53	90	136	183	223	251	268	273	273	270
99	242	320	370	373	325	244	155	86	51	52	83	130	183	232	270	294	304	303	296
100	213	296	363	392	368	301	212	130	77	61	82	125	181	236	283	315	330	332	322
101	183	262	339	390	395	350	270	183	116	83	89	124	178	236	289	329	350	355	346
102	157	222	300	368	400	382	321	239	163	113	104	126	174	231	287	333	362	371	363
103	140	185	254	328	382	393	357	289	212	152	126	134	172	223	280	330	363	377	373
104	139	159	209	279	345	381	374	327	258	195	155	147	172	216	269	319	357	375	374
105	154	148	174	228	296	349	369	348	296	235	186	166	176	210	257	305	344	365	369
106	186	157	156	187	244	304	345	350	320	270	219	188	185	206	245	288	327	351	358
107	232	184	156	162	200	255	308	335	328	294	248	211	196	206	234	272	309	334	345
108	284	225	177	155	169	211	264	307	322	307	272	234	210	208	225	255	289	316	328
109	335	272	210	166	155	177	223	272	304	308	287	253	225	212	218	239	268	295	311
110	377	316	248	190	157	157	189	235	278	298	293	268	239	218	212	224	246	271	289
111	403	349	283	218	170	151	164	202	248	280	290	276	250	224	208	209	223	244	264
112	410	366	307	243	187	154	150	176	218	257	280	278	258	230	207	196	200	214	233
113	398	363	314	257	201	161	144	157	191	232	264	274	263	236	207	186	178	184	199
114	371	344	304	257	207	166	143	145	169	208	245	264	263	212	211	181	162	156	164
115	334	312	280	242	202	165	141	137	153	186	224	251	259	246	218	183	153	135	133
116	296	274	247	216	185	157	137	130	141	169	205	235	252	248	226	190	154	125	111
117	261	237	211	185	162	142	128	124	133	156	188	220	243	248	234	203	164	128	102
118	235	206	178	153	135	123	117	118	128	149	177	207	232	244	240	216	181	141	107
119	216	183	152	126	109	102	103	111	126	146	170	197	222	238	242	228	201	164	126
120	206	169	134	106	88	84	90	105	125	147	170	192	214	231	239	236	218	189	154

The horizontal argument of this table is Arg. I.

Inequalities of the Fundamental Argument multiplied by 3—Continued.

TABLE XXVIII—Continued.

d. 2280	d. 2400	d. 2520	d. 2640	d. 2760	d. 2880	d. 3000	d. 3120	d. 3240	d. 3360	d. 3480	d. 3600	d. 3720	d. 3840	d. 3960	d. 4080	d. 4200	d. 4320	d. 4440	A.
164	157	148	136	124	115	115	125	149	185	230	283	331	369	386	381	349	298	237	60
170	158	147	135	124	118	119	131	155	192	238	291	342	385	410	414	391	345	283	61
184	168	152	139	128	122	123	136	160	195	240	291	343	388	419	430	417	380	323	62
206	185	166	149	136	128	130	141	163	196	238	285	336	379	413	430	425	397	349	63
234	211	187	167	151	141	140	148	168	197	234	276	320	362	395	414	415	396	358	64
264	241	216	193	173	160	156	161	176	201	232	268	305	340	369	387	390	377	348	65
293	274	249	223	202	185	177	179	190	209	235	263	293	319	342	354	357	346	323	66
316	303	282	257	233	214	203	201	207	222	242	264	286	304	317	323	321	309	288	67
328	325	310	288	265	244	231	225	227	238	253	269	285	295	300	298	289	272	251	68
327	334	328	312	291	269	255	247	247	254	266	278	289	293	292	281	264	242	217	69
313	330	334	326	310	289	275	265	263	267	277	287	295	296	289	272	249	221	190	70
287	312	326	326	317	300	286	275	271	274	282	292	299	298	289	270	242	209	173	71
255	284	306	316	313	301	288	276	270	272	280	289	296	298	289	269	241	205	166	72
220	251	278	295	299	292	281	269	262	261	267	277	286	290	285	268	240	205	164	73
191	219	247	269	278	277	268	255	246	243	248	257	267	274	274	262	238	205	166	74
170	192	218	242	256	258	251	239	227	221	222	231	241	251	255	249	231	204	167	75
158	174	197	219	235	241	236	223	209	198	196	201	210	222	231	231	221	199	168	76
156	167	184	204	220	227	224	212	195	180	172	173	180	192	204	211	208	193	169	77
160	166	180	197	212	220	217	206	187	168	154	150	153	164	178	189	194	187	170	78
166	170	181	196	210	218	217	206	186	164	145	134	132	140	154	169	181	182	174	79
167	173	185	199	213	221	221	211	191	167	143	126	119	123	136	154	170	180	180	80
162	172	186	202	217	226	228	220	201	176	149	126	114	113	123	142	163	180	189	81
149	163	182	201	219	231	235	229	212	188	159	133	115	109	116	134	158	181	199	82
130	148	172	195	217	233	240	236	223	200	172	143	121	110	113	129	154	183	208	83
110	130	157	185	210	230	242	242	231	211	185	155	131	116	113	126	150	182	214	84
92	112	141	172	201	225	240	244	238	222	197	168	142	124	117	126	147	179	216	85
82	100	128	159	191	218	237	245	243	230	209	182	156	135	124	128	145	176	214	86
82	98	122	151	183	212	234	246	247	238	220	196	171	149	135	133	146	172	210	87
93	106	125	150	180	209	232	247	252	246	232	211	187	165	149	143	150	172	205	88
114	123	138	159	184	210	234	251	258	255	244	226	205	183	167	158	160	176	204	89
139	148	159	175	195	217	239	256	266	266	257	242	223	202	187	176	175	186	208	90
166	176	185	196	212	229	247	263	274	276	270	257	240	222	206	196	195	200	217	91
190	202	211	220	231	243	256	271	281	284	280	270	255	238	224	214	212	216	229	92
208	223	234	243	250	259	269	279	287	291	288	279	265	251	237	228	226	230	241	93
222	239	252	261	267	273	278	285	291	294	291	284	271	257	245	236	234	239	250	94
233	249	263	273	279	283	286	289	292	293	290	283	271	258	245	237	235	240	252	95
242	257	271	281	286	290	291	291	291	290	286	279	267	254	240	231	229	234	245	96
254	264	275	284	290	293	293	292	289	285	280	272	259	246	231	222	217	220	231	97
270	273	279	285	290	293	293	290	286	281	274	264	251	237	221	210	203	203	211	98
287	284	283	285	287	290	290	287	283	276	268	257	244	229	213	200	190	187	191	99
309	297	288	283	282	283	283	282	279	272	264	252	238	224	208	194	181	174	175	100
328	309	293	281	275	273	273	273	272	267	259	248	235	220	205	191	177	168	165	101
344	319	296	276	264	259	258	260	261	259	254	244	233	218	204	191	178	168	164	102
353	325	296	269	251	241	238	240	244	247	245	238	229	217	204	192	182	173	168	103
356	326	292	259	234	219	212	215	221	227	231	229	222	213	202	192	185	179	176	104
353	322	285	247	215	194	184	185	192	202	210	214	212	205	197	189	185	183	184	105
345	316	277	235	198	170	154	152	159	171	184	193	197	194	188	182	181	182	187	106
335	308	269	225	182	149	126	120	125	139	155	170	178	179	177	172	171	175	184	107
323	300	263	218	173	134	106	94	95	108	126	145	157	163	163	160	159	163	174	108
310	292	260	217	170	127	94	77	72	82	101	122	139	149	152	150	148	150	161	109
294	284	257	218	172	129	93	70	61	67	84	106	125	140	146	145	141	140	147	110
274	271	253	221	180	138	101	74	60	62	77	98	120	138	147	147	142	137	138	111
248	252	243	221	188	151	115	87	71	68	80	100	123	143	157	160	154	145	141	112
216	226	227	215	192	162	131	105	88	84	92	111	134	157	174	180	176	165	154	113
179	194	202	201	189	170	146	124	109	104	111	128	152	176	197	208	207	195	178	114
143	158	171	179	178	170	156	140	130	126	132	147	171	199	223	238	242	233	214	115
111	123	138	152	160	163	158	151	146	145	151	167	191	220	246	267	277	272	254	116
91	95	108	125	140	151	156	157	158	160	168	184	208	237	266	291	307	308	294	117
87	81	88	103	121	137	149	158	164	171	181	196	220	248	279	308	329	337	329	118
97	82	81	92	109	127	144	158	170	180	190	206	227	254	284	316	340	355	355	119
122	100	90	95	108	126	144	161	176	189	200	213	232	256	284	315	342	361	369	120

The quantities tabulated are in units of the fourth decimal of the day.

Inequalities of the Fundamental Argument multiplied by 3—Continued.

TABLE XXIX.

B.	d. 0	d. 120	d. 240	d. 360	d. 480	d. 600	d. 720	d. 840	d. 960	d. 1080	d. 1200	d. 1320	d. 1440	d. 1560	d. 1680	d. 1800	d. 1920	d. 2040	d. 2160
0	380	406	426	439	444	443	434	419	399	376	352	328	305	285	269	258	250	246	244
1	345	376	402	421	433	438	436	427	412	392	370	347	323	302	283	269	258	252	248
2	305	339	370	395	414	425	430	427	418	403	384	363	340	318	298	281	268	258	252
3	263	300	334	364	388	406	417	420	417	408	394	375	355	333	313	294	278	266	258
4	222	259	295	328	357	381	398	407	411	407	398	384	366	347	326	307	290	276	265
5	183	220	256	291	324	352	374	389	399	401	397	388	375	358	339	320	302	287	274
6	149	183	219	255	289	320	347	367	382	390	392	388	379	365	349	331	314	298	284
7	120	151	184	219	254	288	317	342	361	374	382	382	378	369	356	340	324	307	292
8	96	122	153	186	221	255	285	313	337	354	367	373	373	368	359	346	331	316	301
9	77	99	125	156	188	222	254	284	310	332	348	359	364	363	358	348	336	322	307
10	63	80	102	129	159	191	223	254	283	307	327	342	351	354	353	347	337	325	312
11	56	68	85	108	135	164	195	226	255	281	305	322	334	343	345	343	337	327	316
12	55	61	73	92	114	141	170	200	229	257	282	303	318	330	336	337	334	327	318
13	61	61	69	82	100	123	149	178	206	235	261	283	302	316	326	330	330	326	319
14	71	67	69	78	91	110	133	159	187	215	241	265	285	302	315	322	325	324	320
15	84	76	74	78	88	102	122	145	170	197	223	248	270	288	303	314	320	321	319
16	100	89	83	83	88	98	114	134	157	182	207	231	255	275	292	304	313	317	317
17	118	103	94	90	91	98	109	126	146	169	192	216	240	261	279	294	305	311	315
18	135	119	107	99	97	99	107	120	138	158	180	203	226	248	267	283	296	304	310
19	152	134	120	110	104	104	108	117	132	149	169	191	213	235	255	273	287	297	304
20	169	151	135	123	114	110	111	117	128	143	161	181	202	224	244	262	278	290	299
21	186	168	151	137	126	119	118	120	128	140	155	174	193	214	234	253	270	284	294
22	203	185	168	153	140	131	126	126	131	140	152	169	186	206	226	246	263	278	290
23	219	202	186	169	155	145	137	135	136	143	152	166	182	201	220	239	257	273	287
24	234	218	203	186	171	159	150	144	144	147	154	166	180	197	215	234	252	268	283
25	246	232	218	202	187	173	163	155	152	153	157	166	178	194	210	229	247	264	279
26	254	244	230	216	201	187	175	166	160	159	161	168	178	191	207	224	242	259	275
27	260	252	241	227	213	199	186	176	168	165	165	170	177	189	203	219	236	254	271
28	264	259	249	238	225	210	197	186	177	172	170	172	178	188	200	215	232	249	266
29	266	263	256	246	235	221	208	196	186	179	175	176	179	187	198	211	227	245	262
30	268	267	262	255	245	232	220	207	196	188	182	180	182	188	197	209	224	241	258
31	269	270	267	262	253	243	231	218	207	197	190	186	186	190	197	208	222	237	254
32	269	271	271	268	261	252	241	229	217	206	198	193	191	193	198	207	219	234	251
33	267	271	273	272	267	260	250	239	227	216	207	200	196	196	199	206	217	231	247
34	264	269	272	273	271	265	257	247	236	224	215	206	201	199	200	205	214	227	242
35	259	265	269	272	271	268	262	253	243	231	221	212	205	201	201	204	211	222	236
36	254	260	265	269	270	269	265	257	248	237	227	216	208	203	201	202	207	216	229
37	249	254	259	264	267	268	265	260	252	242	232	221	212	205	201	200	204	211	222
38	246	249	254	259	263	266	265	262	255	246	236	226	216	207	201	199	200	206	215
39	245	246	250	255	260	263	264	263	258	250	241	230	220	210	203	199	198	201	208
40	246	245	247	251	256	260	263	263	260	254	245	235	224	214	205	199	196	196	201
41	250	245	246	248	252	257	260	262	260	256	249	240	228	218	208	199	194	193	195
42	255	248	245	245	248	253	256	259	260	257	252	243	232	221	210	200	193	189	188
43	261	251	246	243	245	248	252	255	257	256	252	245	236	225	213	200	192	185	182
44	269	256	248	243	241	243	246	250	252	253	251	240	237	227	215	202	192	182	176
45	280	264	252	244	239	238	240	244	247	249	248	245	238	229	217	204	192	181	172
46	294	275	260	248	240	236	236	238	241	244	245	243	238	230	219	206	193	181	169
47	310	290	271	256	245	237	234	234	236	239	241	241	238	232	222	210	196	182	169
48	330	308	287	268	253	242	236	233	233	235	237	238	237	233	225	215	201	187	172
49	352	329	306	285	266	251	241	235	232	233	234	236	236	234	228	219	207	193	177
50	374	352	328	304	283	264	250	240	234	232	232	234	235	234	230	224	213	199	184
51	395	374	350	326	302	280	262	248	238	233	232	232	233	233	231	227	218	206	191
52	413	395	372	348	323	298	277	259	246	237	232	231	231	232	232	229	223	212	199
53	428	413	394	370	345	319	295	274	256	244	235	231	230	231	231	230	226	218	207
54	440	429	414	391	367	341	316	292	271	254	242	235	231	230	230	230	228	223	215
55	446	441	429	411	390	365	339	313	289	269	253	242	235	231	231	231	230	227	221
56	447	448	442	429	411	388	363	337	311	288	268	253	242	236	233	233	232	231	227
57	442	449	449	442	429	410	387	361	335	309	287	268	254	244	238	236	235	235	232
58	429	443	450	449	441	427	408	385	359	333	309	287	269	255	246	241	239	238	237
59	409	429	442	448	447	438	424	405	381	356	331	307	286	269	257	249	244	242	241
60	380	406	426	439	444	443	434	419	399	376	352	328	305	285	269	258	250	246	244

The horizontal argument of this table is Arg. I.

Inequalities of the Fundamental Argument multiplied by 3—Continued.

TABLE XXIX—Continued.

d. 2280	d. 2400	d. 2520	d. 2640	d. 2760	d. 2880	d. 3000	d. 3120	d. 3240	d. 3360	d. 3480	d. 3600	d. 3720	d. 3840	d. 3960	d. 4080	d. 4200	d. 4320	d. 4440	B.
243	241	238	231	220	205	186	164	140	117	95	75	61	52	50	54	66	83	108	0
246	245	243	238	230	218	202	182	160	136	113	91	73	59	51	50	56	68	87	1
249	247	246	244	238	229	216	199	179	156	132	109	88	71	58	52	52	58	72	2
253	250	249	248	244	238	228	215	197	176	153	129	107	86	70	59	54	54	62	3
258	254	252	251	249	245	238	228	214	195	174	151	127	105	86	71	61	57	60	4
264	258	255	254	253	251	247	239	228	213	194	173	149	127	105	87	74	65	63	5
272	264	259	257	256	255	253	249	240	228	212	193	171	149	126	106	90	78	71	6
280	270	263	260	259	258	257	255	249	240	228	211	192	170	148	127	108	93	83	7
287	276	267	263	260	260	259	258	255	249	240	227	209	190	169	148	127	110	97	8
293	281	271	265	261	260	259	260	258	255	249	238	224	207	187	167	146	128	112	9
299	286	275	267	262	259	258	259	259	258	254	247	236	221	204	185	164	145	128	10
303	290	279	270	263	259	257	258	258	259	257	253	245	233	218	201	182	162	144	11
306	294	283	273	265	260	257	257	258	259	259	257	252	243	231	216	198	179	161	12
309	298	287	277	268	262	258	257	257	259	260	260	258	252	242	230	214	197	178	13
311	302	292	281	272	265	260	257	257	259	261	262	262	259	252	242	228	213	196	14
313	305	296	286	276	268	262	258	257	258	261	263	265	264	260	252	241	228	212	15
313	307	299	289	280	271	264	259	257	258	259	262	265	266	265	260	252	241	227	16
312	308	301	292	283	274	266	260	257	256	258	261	264	266	267	265	260	251	239	17
310	307	302	295	286	277	268	261	256	254	255	257	261	265	267	267	264	258	249	18
308	306	303	296	289	279	271	262	257	253	252	254	257	261	265	267	267	263	256	19
304	305	303	298	291	282	274	265	258	253	251	251	254	258	262	265	267	266	261	20
301	304	304	301	295	287	278	269	261	254	251	250	251	255	259	264	267	268	265	21
299	304	306	304	299	292	284	274	265	258	253	250	250	253	257	262	266	269	269	22
297	304	308	308	304	298	290	281	271	263	256	252	250	252	255	260	265	269	271	23
295	304	309	311	309	304	297	288	278	269	261	255	252	251	254	258	263	268	271	24
293	303	310	313	313	309	303	295	285	275	266	258	253	251	252	255	260	265	270	25
290	301	310	315	316	314	309	302	292	281	271	262	255	251	250	252	256	261	266	26
286	299	309	316	319	318	315	308	299	288	277	267	258	252	249	249	252	256	261	27
282	296	308	316	321	323	320	315	306	296	285	273	263	255	249	247	248	251	256	28
278	294	307	317	324	327	326	322	315	305	294	281	270	259	252	247	246	247	251	29
275	292	306	318	327	332	333	331	325	316	304	292	279	267	257	250	246	245	247	30
272	289	304	318	329	337	340	339	335	328	317	304	290	277	265	255	248	245	245	31
269	286	303	318	331	341	346	348	346	339	330	318	303	289	275	263	254	248	245	32
264	282	300	317	332	343	351	355	355	351	343	331	317	302	287	273	261	252	247	33
259	277	296	344	330	344	354	361	363	361	355	345	332	316	300	284	270	258	250	34
252	270	289	309	327	342	355	364	369	370	366	357	345	331	314	297	280	266	255	35
245	262	282	302	321	338	354	366	374	377	375	369	359	345	328	311	292	276	261	36
236	253	273	293	313	333	351	365	376	382	384	381	373	360	344	326	307	288	271	37
227	244	263	283	305	325	346	363	377	386	391	391	386	376	361	343	323	303	284	38
219	234	252	272	294	316	339	359	376	389	397	401	398	391	378	362	343	322	300	39
210	224	241	260	282	305	329	352	372	388	401	408	409	405	396	381	363	343	320	40
202	213	228	247	269	292	317	341	364	384	400	412	417	418	412	400	384	364	342	41
193	201	214	231	252	275	301	327	352	375	395	411	421	426	424	417	404	386	364	42
184	189	199	214	234	256	281	308	335	361	385	405	420	429	433	429	420	406	386	43
175	177	184	196	213	234	259	286	314	342	369	393	413	427	436	437	433	422	405	44
167	166	170	178	193	211	234	261	290	319	348	375	400	419	433	440	441	435	423	45
162	157	157	162	172	188	209	234	262	292	323	353	381	406	425	438	444	443	436	46
158	151	147	148	154	166	184	206	233	263	295	327	358	386	411	429	442	447	446	47
158	147	140	136	139	147	160	179	204	232	264	297	330	362	390	415	433	445	450	48
161	148	136	129	126	130	138	154	175	200	231	264	298	332	364	394	417	435	447	49
167	151	136	125	118	116	120	130	147	169	197	228	263	298	333	366	395	418	436	50
175	157	140	125	113	107	105	110	121	139	163	191	224	259	295	331	364	393	417	51
183	155	146	129	113	101	95	94	99	111	130	155	185	219	255	291	327	361	390	52
192	175	156	136	117	102	90	83	83	89	102	121	147	178	213	249	387	322	356	53
202	186	167	147	126	107	91	79	73	73	80	93	114	140	172	207	244	281	317	54
211	198	180	160	139	118	98	82	70	64	64	72	87	108	135	167	202	239	277	55
220	209	195	176	155	133	111	91	75	64	57	59	67	82	104	132	164	199	236	56
228	220	208	192	173	151	128	106	86	70	59	53	55	64	80	103	131	163	198	57
235	229	221	207	190	170	148	124	102	82	66	55	51	54	64	80	103	131	164	58
240	237	231	220	206	188	167	144	121	98	79	63	53	50	53	64	82	105	133	59
243	241	238	231	220	205	186	164	140	117	95	75	61	52	50	54	66	83	108	60

The quantities tabulated are in units of the fourth decimal of the day.

Inequalities of the Fundamental Argument multiplied by 3—Continued.

TABLE XXX.

C.	d. o	d. 240	d. 480	d. 720	d. 960	d. 1200	d. 1440	d. 1680	d. 1920	d. 2160	d. 2400	d. 2640	d. 2880	d. 3120	d. 3360	d. 3600	d. 3840	d. 4080	d. 4320
0	51	50	52	54	54	51	47	44	45	50	59	70	81	89	93	91	83	72	60
1	52	48	48	50	51	49	46	43	42	46	53	64	77	88	95	96	91	81	68
2	56	49	46	47	48	47	45	41	39	41	47	58	71	84	95	100	98	90	78
3	62	52	46	44	45	44	43	39	37	37	41	50	63	78	91	100	103	98	88
4	71	59	50	45	43	42	41	38	35	33	35	42	54	69	84	97	104	104	97
5	81	67	56	47	44	41	40	37	33	30	30	34	44	59	76	91	103	108	105
6	91	78	64	53	46	42	40	36	32	28	26	28	35	48	65	82	97	107	109
7	100	88	74	61	51	45	41	37	33	28	24	22	27	37	52	70	88	102	110
8	107	98	85	71	59	50	44	40	35	29	23	19	20	27	40	57	77	94	106
9	110	106	95	82	68	57	49	43	38	32	25	18	16	19	28	44	63	83	99
10	109	110	104	92	78	66	56	49	43	36	29	20	15	13	19	31	49	70	89
11	105	111	109	101	88	75	64	55	49	42	34	24	16	11	12	21	36	55	76
12	96	108	111	107	97	85	73	63	55	48	40	31	21	13	9	13	24	41	62
13	85	101	109	110	104	94	82	71	63	55	47	38	27	17	10	8	15	28	47
14	71	90	104	110	108	101	90	80	70	63	55	46	36	24	13	8	9	18	34
15	57	77	94	105	108	105	97	87	77	70	62	54	45	33	20	11	7	11	23
16	43	63	83	98	105	106	101	93	84	76	69	62	54	42	29	17	9	8	15
17	30	49	70	87	99	105	103	98	89	82	75	69	62	52	40	26	15	9	10
18	20	36	56	75	90	100	102	100	93	86	80	74	69	61	50	37	23	13	10
19	13	25	43	62	79	92	99	99	95	89	83	79	74	68	59	47	33	21	13
20	10	17	32	49	68	83	93	97	95	91	86	81	78	74	67	57	44	30	19
21	11	13	23	38	56	72	85	92	93	91	87	82	80	77	73	66	54	41	28
22	15	12	18	30	45	62	76	86	90	90	87	83	80	78	76	72	63	51	38
23	22	15	16	24	37	52	67	78	85	87	86	82	79	78	77	75	70	60	48
24	31	21	17	21	30	44	58	71	80	84	84	81	78	77	76	76	74	67	57
25	41	29	22	21	27	38	51	64	74	80	81	80	77	74	74	75	75	72	64
26	51	39	28	24	26	34	45	57	68	76	79	78	75	72	71	72	74	73	69
27	60	48	37	29	28	32	41	52	64	72	77	77	74	71	68	68	70	72	71
28	66	56	45	36	31	33	39	49	60	69	75	77	74	70	66	65	66	69	70
29	70	63	53	43	36	35	39	46	57	66	73	76	75	71	66	62	62	64	67
30	71	67	59	50	42	38	39	45	54	64	72	76	76	73	67	61	59	60	62
31	69	68	63	55	47	42	41	45	53	62	71	77	78	75	69	63	58	56	58
32	65	67	65	59	52	46	43	45	52	60	70	77	80	79	73	66	58	54	53
33	61	64	64	60	55	49	45	45	50	59	68	77	82	83	79	71	62	55	51
34	56	59	61	60	56	51	46	45	49	56	66	76	83	86	84	77	67	58	51
35	52	54	57	58	56	52	47	45	47	53	63	73	83	89	89	84	75	64	54
36	51	50	52	54	54	51	47	44	45	50	59	70	81	89	93	91	83	72	60

The horizontal argument of this table is Arg. I. The quantities tabulated are in units of the fourth decimal of the day

Inequalities of the Fundamental Argument—Factor to be multiplied by m.

TABLE XXXI.

Arg. I.	Factor.	Arg. I.	Factor.	Arg. I.	Factor.	Arg. I.	Factor.
d.	d.	d.	d.	d.	d.	d.	d.
0	—0.030059 + 818	1100	+0.027504 + 800	2200	+0.026945 — 828	3300	—0.029782 — 788
20	029241 842	1120	028304 775	2220	026117 850	3320	030570 764
40	028399 866	1140	029079 750	2240	025267 871	3340	031334 764
60	027533 888	1160	029829 723	2260	024396 892	3360	032072 738
80	026645 911	1180	030552 698	2280	023504 913	3380	032784 685
100	025734 933	1200	031250 669	2300	022591 931	3400	033469 659
120	024801 953	1220	031919 643	2320	021660 950	3420	034128 630
140	023848 973	1240	032562 614	2340	020710 967	3440	034758 602
160	022875 992	1260	033176 585	2360	019743 985	3460	035360 572
180	021883 1010	1280	033761 557	2380	018758 1001	3480	035932 544
200	020873 1025	1300	034318 526	2400	017757 1016	3500	036476 513
220	019848 1044	1320	034844 497	2420	016741 1031	3520	036989 482
240	018804 1059	1340	035341 467	2440	015710 1045	3540	037471 452
260	017745 1072	1360	035808 436	2460	014665 1057	3560	037923 420
280	016673 1086	1380	036244 405	2480	013608 1069	3580	038343 388
300	015587 1099	1400	036649 375	2500	012539 1082	3600	038731 356
320	014488 1110	1420	037024 342	2520	011457 1091	3620	039087 324
340	013378 1120	1440	037366 310	2540	010366 1109	3640	039411 291
360	012258 1130	1460	037676 279	2560	009265 1117	3660	039702 257
380	011128 1138	1480	037955 247	2580	008156 1124	3680	039959 224
400	009990 1146	1500	038202 214	2600	007039 1130	3700	040183 191
420	008844 1152	1520	038416 182	2620	005915 1135	3720	040374 156
440	007692 1158	1540	038598 149	2640	004785 1139	3740	040530 123
460	006534 1163	1560	038747 116	2660	003650 1142	3760	040653 88
480	005371 1165	1580	038863 84	2680	002511 1144	3780	040741 54
500	004206 1169	1600	038947 51	2700	001369 1146	3800	040795 20
520	003037 1169	1620	038998 18	2720	+0.000225 1146	3820	040815 14
540	001868 1170	1640	039016 + 14	2740	—0.000921 1146	3840	040801 + 50
560	—0.000698 1169	1660	039002 48	2760	002067 1143	3860	040751 83
580	+0.000471 1168	1680	038954 80	2780	003213 1142	3880	040668 118
600	001639 1165	1700	038874 112	2800	004356 1138	3900	040550 152
620	002804 1161	1720	038762 145	2820	005498 1134	3920	040398 186
640	003965 1157	1740	038617 178	2840	006636 1128	3940	040212 221
660	005122 1151	1760	038439 209	2860	007770 1123	3960	039991 254
680	006273 1145	1780	038230 242	2880	008898 1115	3980	039737 288
700	007418 1136	1800	037988 273	2900	010021 1107	4000	039449 321
720	008554 1129	1820	037715 305	2920	011136 1099	4020	039128 355
740	009683 1119	1840	037410 336	2940	012243 1088	4040	038773 387
760	010802 1108	1860	037074 367	2960	013342 1078	4060	038386 421
780	011910 1097	1880	036707 398	2980	014430 1065	4080	037965 452
800	013007 1085	1900	036309 428	3000	015508 1054	4100	037513 484
820	014092 1071	1920	035881 458	3020	016573 1039	4120	037029 515
840	015163 1058	1940	035423 487	3040	017627 1026	4140	036514 547
860	016221 1042	1960	034936 517	3060	018666 1010	4160	035967 577
880	017263 1026	1980	034419 545	3080	019692 994	4180	035390 607
900	018289 1010	2000	033874 574	3100	020702 977	4200	034783 637
920	019299 992	2020	033300 602	3120	021696 960	4220	034146 665
940	020291 974	2040	032698 629	3140	022673 940	4240	033481 694
960	021265 955	2060	032069 656	3160	023633 922	4260	032787 721
980	022220 935	2080	031413 682	3180	024573 901	4280	032066 749
1000	023155 914	2100	030731 708	3200	025495 880	4300	031317 775
1020	024069 893	2120	030023 733	3220	026396 858	4320	030542 801
1040	024962 870	2140	029290 758	3240	027276 835	4340	029741 826
1060	025832 848	2160	028532 782	3260	028134 813	4360	028915 850
1080	026680 824	2180	027750 805	3280	—0.029782 — 813	4380	028065 873
1100	+0.027504 + 824	2200	+0.026945 — 805	3300		4400	—0.027192 + 873

Inequalities of the Fundamental Argument—Factor to be multiplied by m—Continued.

TABLE XXXII.

A.	d. o	d. 120	d. 240	d. 360	d. 480	d. 600	d. 720	d. 840	d. 960	d. 1080	d. 1200	d. 1320	d. 1440	d. 1560	d. 1680	d. 1800	d. 1920	d. 2040	d. 2160
0	252	237	222	208	194	183	174	168	165	165	166	170	174	176	178	177	178	179	184
1	300	281	263	245	229	214	201	191	184	181	179	180	182	183	183	182	180	179	181
2	354	333	311	290	270	252	236	223	212	205	200	198	198	197	196	193	189	186	184
3	413	389	364	341	318	297	278	262	248	237	229	224	221	218	215	211	206	200	195
4	474	448	421	395	370	348	326	307	291	277	266	258	252	247	242	236	230	222	214
5	533	506	479	452	426	401	378	357	339	323	310	299	291	284	277	270	262	252	242
6	588	562	535	508	481	455	432	411	391	373	358	347	337	328	319	310	302	290	278
7	636	612	586	560	533	508	484	463	443	426	411	398	387	376	367	357	347	334	321
8	675	654	630	606	580	557	533	513	495	478	463	451	439	428	418	407	396	383	369
9	704	686	665	643	619	599	577	558	542	527	514	502	492	481	470	460	448	435	420
10	722	707	690	671	650	631	612	596	582	570	559	550	541	532	522	512	500	487	472
11	729	718	704	688	671	654	639	625	614	605	598	591	585	578	570	560	549	537	523
12	725	719	709	696	683	669	657	646	638	632	627	624	621	617	611	604	594	583	570
13	714	711	705	696	686	675	666	658	652	649	648	648	648	648	645	639	632	622	611
14	696	696	693	688	680	674	666	661	658	658	660	663	665	668	669	666	661	654	644
15	673	676	676	674	670	665	661	658	657	659	663	668	674	680	683	684	681	676	668
16	648	653	656	657	655	653	651	650	651	654	659	666	674	682	688	691	691	688	682
17	622	629	634	637	637	637	637	639	640	645	650	659	667	677	685	690	693	691	687
18	597	606	613	617	619	621	622	625	628	632	638	648	656	666	676	682	686	686	683
19	574	584	592	598	601	604	608	610	615	620	626	634	643	653	662	669	673	674	672
20	555	566	574	581	586	590	594	597	602	607	613	620	628	637	646	653	657	658	657
21	538	550	559	567	573	577	582	586	591	595	601	607	614	622	628	635	638	640	638
22	524	537	547	556	562	567	572	576	581	586	591	596	601	607	612	617	619	620	618
23	512	526	537	546	554	559	564	569	574	578	583	586	591	594	598	601	601	601	598
24	500	515	529	539	547	553	558	563	568	571	576	578	581	583	585	585	585	583	579
25	488	504	520	531	541	547	553	558	562	566	570	571	573	574	573	572	570	566	561
26	474	492	509	522	533	542	548	553	557	561	564	565	565	565	563	560	556	551	546
27	458	478	496	511	523	533	540	546	550	554	556	558	557	556	553	548	543	537	531
28	440	461	480	497	510	521	530	537	541	545	548	548	548	545	542	536	531	524	517
29	420	441	461	478	493	506	516	524	529	533	536	537	536	534	530	524	518	510	503
30	398	418	438	456	472	486	497	506	512	517	520	522	521	519	515	510	503	496	489
31	374	394	414	432	447	461	474	483	491	496	500	503	503	502	498	494	488	481	475
32	350	369	388	405	420	434	446	456	465	471	476	479	481	480	478	475	470	465	460
33	326	343	361	377	392	404	417	426	434	441	447	451	454	455	454	453	450	447	443
34	301	318	334	349	362	374	384	393	401	408	414	419	423	425	427	428	428	427	426
35	276	292	307	321	333	343	352	359	366	372	378	383	388	392	396	400	402	404	406
36	251	265	280	293	304	313	320	325	330	334	339	346	350	355	361	367	373	379	384
37	224	238	252	265	275	282	288	291	294	296	300	304	309	316	324	332	341	350	359
38	197	211	225	236	246	253	257	258	259	259	261	263	268	275	284	294	306	318	331
39	171	183	196	208	217	223	227	227	225	224	223	224	227	234	243	255	269	284	300
40	146	157	168	179	189	195	197	197	194	191	188	186	188	194	202	215	230	247	267
41	124	132	142	152	161	168	170	168	165	160	155	152	152	155	163	175	191	210	232
42	106	111	119	127	136	141	143	142	139	133	126	121	119	120	127	138	153	173	197
43	94	96	100	106	113	118	120	119	115	108	101	95	90	90	94	103	118	138	162
44	89	87	87	90	95	99	100	99	95	88	80	72	66	64	66	74	87	106	130
45	90	84	81	81	83	84	85	82	78	71	63	54	47	43	44	49	61	78	101
46	98	89	82	79	77	76	75	71	66	59	50	41	33	28	27	30	40	56	77
47	110	99	89	83	78	74	70	65	60	52	42	33	24	18	16	17	25	39	58
48	126	112	101	92	84	77	72	65	58	50	40	30	20	13	10	10	16	27	44
49	142	128	115	105	95	86	78	70	62	52	41	31	21	13	9	7	12	21	35
50	158	143	130	119	108	98	89	79	69	59	48	36	27	18	12	10	12	20	32
51	171	157	145	134	123	112	102	92	81	70	58	46	36	27	20	17	18	23	33
52	180	169	157	147	138	128	118	107	96	84	72	59	48	38	31	27	26	30	37
53	187	177	168	159	151	143	133	124	112	101	88	75	64	53	44	39	38	39	45
54	191	184	176	169	163	157	149	141	130	119	107	94	82	71	61	55	51	51	55
55	195	189	182	177	174	170	164	158	149	139	127	115	102	90	80	72	67	65	67
56	200	194	188	185	184	182	179	176	169	160	150	137	124	112	101	91	85	81	80
57	209	202	197	195	195	195	195	194	189	183	174	162	149	137	124	112	104	98	94
58	223	215	209	207	207	207	211	213	211	207	199	189	177	164	150	137	126	118	111
59	244	233	226	223	223	226	230	233	234	232	227	219	207	194	179	164	151	139	131
60	272	259	249	245	244	247	252	256	260	261	258	251	240	227	211	195	179	165	153

The horizontal argument of this table is Arg. I.

Inequalities of the Fundamental Argument—Factor to be multiplied by m—Continued.

TABLE XXXII—Continued.

d. 2280	d. 2400	d. 2520	d. 2640	d. 2760	d. 2880	d. 3000	d. 3120	d. 3240	d. 3360	d. 3480	d. 3600	d. 3720	d. 3840	d. 3960	d. 4080	d. 4200	d. 4320	d. 4440	A.
192	203	218	233	248	261	271	276	275	269	257	242	225	205	185	165	147	131	117	0
185	193	205	220	235	249	261	269	272	270	262	250	235	218	199	181	163	147	133	1
184	189	197	209	223	237	250	260	266	267	262	253	241	227	210	193	177	162	148	2
191	191	196	204	215	228	240	251	258	262	259	253	243	231	217	202	188	174	161	3
207	203	203	206	214	224	234	244	252	256	256	251	244	233	221	207	194	183	171	4
232	224	219	218	221	227	235	243	250	254	254	250	244	234	223	211	199	189	179	5
265	254	246	240	238	240	244	249	254	257	256	252	245	236	225	214	203	193	184	6
307	293	281	272	265	263	263	265	267	267	265	259	252	242	230	218	207	198	190	7
353	338	324	312	302	295	291	290	288	286	281	274	265	253	240	227	215	205	197	8
404	388	372	357	345	335	328	323	318	313	306	298	286	272	256	241	227	216	207	9
457	440	423	407	393	381	371	364	357	349	340	329	315	299	281	263	246	233	222	10
508	492	475	459	443	430	419	409	401	392	381	369	353	334	314	293	273	257	243	11
556	540	524	508	494	480	468	458	449	439	427	414	397	377	354	331	308	288	272	12
598	583	569	553	540	527	515	506	498	487	476	463	446	425	401	376	350	328	308	13
632	619	606	592	580	569	559	550	543	534	525	512	497	476	452	426	399	374	352	14
658	646	634	622	612	603	595	588	583	577	569	560	546	527	504	478	451	424	400	15
673	662	652	642	634	627	621	617	615	612	608	601	591	575	555	531	504	476	452	16
679	670	660	652	646	640	637	636	637	637	637	634	628	617	600	579	555	528	504	17
676	668	659	652	646	643	641	644	647	652	655	657	656	649	637	621	600	577	554	18
666	658	650	643	638	635	635	640	646	654	662	668	672	671	664	653	637	618	597	19
651	644	634	628	622	619	620	626	635	645	656	667	675	680	679	673	663	648	632	20
632	625	615	608	601	598	599	604	614	627	640	655	667	676	681	681	676	667	656	21
612	604	594	585	578	573	573	578	587	601	616	633	648	661	671	676	677	674	668	22
591	584	573	563	554	548	546	550	558	571	587	604	622	638	651	661	666	668	667	23
572	564	553	542	532	524	520	522	528	540	555	572	591	608	624	638	646	651	655	24
555	546	535	523	512	503	497	497	500	510	524	540	558	576	593	607	618	627	634	25
538	530	519	507	495	486	479	476	477	484	496	511	528	544	561	575	588	598	607	26
523	515	505	493	482	472	464	459	459	464	473	485	500	516	532	545	557	567	577	27
509	501	491	481	471	461	453	448	446	449	456	466	479	493	506	518	529	538	547	28
495	487	479	470	461	453	445	440	437	438	444	452	463	475	486	497	506	513	521	29
482	475	467	460	453	446	440	434	432	432	436	443	453	463	473	482	489	494	499	30
468	462	456	450	445	440	435	431	429	429	433	439	447	456	465	473	478	482	484	31
454	449	445	441	438	434	431	429	427	428	431	437	445	453	461	468	473	474	474	32
440	436	434	432	431	429	428	427	426	428	431	436	445	452	460	468	471	472	471	33
424	423	423	423	424	425	425	426	426	428	431	436	445	452	461	468	473	473	471	34
408	410	412	414	418	420	423	425	426	428	431	436	444	452	461	469	475	476	474	35
389	395	400	405	410	415	419	423	425	428	431	435	442	450	460	469	476	479	477	36
368	377	386	394	402	409	415	421	424	426	429	434	439	447	457	467	475	480	480	37
344	358	370	382	393	402	410	417	421	424	426	430	435	442	451	462	471	478	480	38
317	335	351	367	380	392	402	411	415	419	421	424	429	435	443	454	464	473	477	39
288	303	329	348	365	379	391	401	407	411	414	416	419	424	432	442	453	463	469	40
256	280	304	326	346	363	377	389	396	400	403	404	407	411	417	426	437	448	457	41
223	249	276	301	323	343	360	372	380	385	388	389	391	394	399	407	417	429	440	42
189	217	246	274	298	321	338	352	361	367	369	371	372	373	378	384	394	406	418	43
157	186	216	245	272	296	315	329	339	345	348	349	349	350	353	358	367	379	391	44
128	156	187	216	244	269	289	304	315	320	323	324	323	324	326	330	338	349	361	45
102	130	160	189	217	242	262	277	288	294	297	297	296	296	297	300	307	317	329	46
81	107	135	164	191	216	236	251	262	268	270	270	268	267	267	269	276	284	296	47
65	89	115	142	169	192	211	226	236	241	244	243	241	239	238	240	245	253	264	48
54	76	100	124	149	171	189	202	212	217	218	217	214	212	210	212	216	223	233	49
48	67	88	111	133	153	169	182	190	194	195	193	190	186	185	186	189	195	204	50
47	63	82	101	121	138	152	163	171	174	174	172	167	164	162	162	166	171	179	51
49	63	79	95	112	127	139	148	154	156	155	152	148	144	141	142	145	150	158	52
54	66	79	92	106	119	128	136	140	141	139	135	131	126	124	124	127	133	140	53
62	71	81	92	103	113	120	125	128	129	125	121	116	111	108	109	111	117	125	54
71	78	85	94	103	110	115	118	119	118	115	110	104	99	96	95	98	105	112	55
82	86	91	97	103	108	111	112	112	110	106	100	95	89	86	85	88	94	102	56
94	96	98	101	105	108	109	109	107	104	99	94	87	82	78	77	79	85	94	57
107	107	106	107	109	109	108	106	104	100	95	89	83	78	73	72	73	78	87	58
123	119	116	114	113	111	109	106	103	98	93	87	81	75	71	69	69	74	82	59
142	134	128	123	119	115	111	106	102	97	92	86	81	76	71	68	69	72	79	60

The quantities tabulated are in units of the sixth decimal of the day.

Inequalities of the Fundamental Argument—Factor to be multiplied by m—Continued.

TABLE XXXII—Continued.

A.	d. 0	d. 120	d. 240	d. 360	d. 480	d. 600	d. 720	d. 840	d. 960	d. 1080	d. 1200	d. 1320	d. 1440	d. 1560	d. 1680	d. 1800	d. 1920	d. 2040	d. 2160
60	272	259	249	245	244	247	252	256	260	261	258	251	240	227	211	195	179	165	153
61	309	292	280	273	270	274	278	283	289	292	292	287	277	264	247	229	211	194	178
62	353	333	317	308	303	305	308	315	322	327	329	325	318	305	288	259	249	228	208
63	403	380	361	349	342	341	344	350	358	364	368	367	361	349	333	313	290	267	244
64	455	431	411	396	386	383	384	390	398	405	411	412	408	397	381	361	337	311	284
65	508	484	462	446	434	429	429	434	441	449	456	458	457	448	433	413	389	361	331
66	558	535	514	496	484	477	476	480	486	494	502	506	506	499	487	468	443	415	383
67	602	582	562	545	532	525	523	526	532	540	548	554	556	552	541	524	500	472	440
68	637	621	603	589	577	571	568	570	576	584	593	600	603	602	593	579	557	530	498
69	661	649	636	624	614	610	608	611	617	625	635	643	648	648	642	631	612	587	557
70	673	665	657	649	642	639	640	644	651	660	671	680	686	689	686	678	662	640	613
71	672	670	666	662	659	658	663	669	677	688	699	710	718	723	722	717	705	687	663
72	660	662	662	663	664	667	674	683	694	706	719	731	741	747	750	747	739	725	706
73	638	644	648	652	658	665	674	686	699	714	728	742	754	762	767	767	763	753	738
74	610	619	625	633	641	651	663	678	694	711	727	742	756	767	773	776	775	769	759
75	580	589	597	606	617	629	644	660	678	697	716	733	748	760	769	774	776	773	767
76	550	558	567	576	588	601	616	634	654	674	695	714	730	744	755	761	765	766	763
77	523	530	537	546	557	570	585	603	623	644	666	686	703	719	731	739	745	748	748
78	501	506	512	518	527	538	553	569	588	610	631	652	669	685	699	709	716	721	723
79	486	488	491	494	501	509	521	535	553	572	592	612	630	647	661	672	680	686	691
80	476	476	476	477	479	484	492	504	518	535	553	571	589	605	619	630	639	646	653
81	472	470	468	465	464	465	469	476	487	500	515	531	546	561	574	586	595	603	610
82	472	469	464	459	454	451	450	454	460	469	480	492	506	518	530	540	549	557	565
83	474	471	465	458	450	443	438	437	438	443	449	458	468	477	487	496	504	512	520
84	477	475	469	460	450	440	431	425	422	422	424	428	434	440	448	455	462	468	476
85	479	478	473	464	453	440	428	418	411	406	404	404	406	409	414	418	423	428	435
86	478	479	476	468	456	442	427	414	403	395	388	385	383	383	385	386	389	393	398
87	474	478	477	470	459	445	429	413	399	387	377	370	366	362	361	360	361	363	367
88	466	472	473	470	460	447	430	413	396	382	370	360	353	347	344	341	339	340	342
89	454	462	466	465	458	446	430	412	395	378	364	353	343	336	330	326	323	322	322
90	437	446	453	455	451	441	427	410	392	375	359	346	336	327	321	316	312	310	309
91	416	426	435	439	439	432	420	405	387	370	354	341	329	321	314	309	305	303	301
92	390	402	412	419	422	418	410	396	380	363	348	334	323	314	308	303	300	298	296
93	362	373	385	394	400	400	393	383	369	354	339	326	315	308	302	299	297	295	293
94	331	342	354	365	373	376	373	366	354	341	328	316	306	300	296	294	293	292	292
95	298	309	321	333	343	348	349	345	336	325	314	304	296	290	288	287	289	290	291
96	266	276	288	300	310	318	322	320	315	307	298	290	283	279	278	280	283	286	288
97	235	245	256	268	278	287	292	294	291	286	280	274	269	267	268	271	276	281	285
98	206	215	226	237	247	256	263	266	266	264	260	257	254	253	256	261	267	274	281
99	181	189	198	209	219	227	235	239	241	241	239	238	238	239	243	250	258	267	275
100	159	166	175	185	194	202	209	214	217	218	219	220	221	224	230	239	248	259	269
101	139	147	156	166	173	182	187	192	196	198	200	202	205	210	218	227	238	251	262
102	123	131	140	149	158	164	170	174	177	180	183	186	191	197	205	216	228	242	254
103	109	118	127	137	145	152	157	161	163	165	169	172	177	184	194	205	218	233	246
104	97	106	117	127	136	143	148	151	154	155	158	161	167	174	184	196	210	224	238
105	87	97	108	119	130	138	143	147	148	149	151	154	159	167	177	188	202	217	231
106	80	89	102	114	125	135	142	145	147	147	148	150	155	161	172	183	196	210	225
107	74	83	96	109	121	133	141	146	148	149	149	150	153	160	169	180	193	206	220
108	70	80	91	104	118	132	141	148	151	153	152	153	155	161	169	179	191	204	217
109	70	77	88	101	115	130	142	151	155	158	158	158	160	164	171	181	192	204	216
110	71	77	86	99	113	128	142	152	159	163	164	165	166	169	175	184	195	207	218
111	75	79	87	98	111	124	140	152	161	167	170	171	172	175	180	188	198	210	221
112	81	84	89	98	109	122	137	151	161	169	173	176	178	180	185	192	202	213	224
113	90	91	94	100	109	121	134	148	159	169	175	179	182	184	188	195	204	215	227
114	100	100	101	104	111	120	131	144	156	166	174	179	183	186	190	196	205	216	227
115	113	111	110	111	114	120	129	140	152	162	171	178	182	185	189	194	202	213	225
116	129	126	122	121	120	123	129	138	147	157	166	174	179	183	187	191	198	208	219
117	150	145	139	134	131	130	132	138	145	154	162	169	175	179	183	186	192	200	211
118	177	169	160	153	146	142	140	142	146	152	159	166	172	176	179	181	185	192	201
119	211	199	188	177	167	159	154	151	152	155	160	166	171	174	176	178	180	184	191
120	252	237	222	208	194	183	174	168	165	165	166	170	174	178	177	178	179	179	184

The horizontal argument of this table is Arg. I.

Inequalities of the Fundamental Argument—Factor to be multiplied by m—Continued.

TABLE XXXII—Continued.

d. 2280	d. 2400	d. 2520	d. 2640	d. 2760	d. 2880	d. 3000	d. 3120	d. 3240	d. 3360	d. 3480	d. 3600	d. 3720	d. 3840	d. 3960	d. 4080	d. 4200	d. 4320	d. 4440	A.
142	134	128	123	119	115	111	106	102	97	92	86	81	76	71	68	69	72	79	60
164	152	142	134	127	120	115	108	104	98	93	88	82	78	74	71	70	72	78	61
190	174	160	149	138	129	121	113	107	100	95	90	86	82	78	75	74	75	79	62
221	201	183	168	154	141	130	121	112	105	100	95	91	87	84	81	80	80	82	63
259	234	212	193	175	159	145	133	122	114	107	102	98	94	92	89	87	87	88	64
302	274	248	224	202	183	165	150	138	127	119	112	108	104	101	99	97	95	95	65
352	320	290	262	236	214	193	175	159	147	136	128	122	118	114	111	109	106	104	66
406	372	339	307	278	252	228	207	188	173	160	150	142	136	131	127	123	119	116	67
464	429	393	359	327	299	272	248	224	208	192	179	169	160	153	147	142	137	132	68
523	488	452	416	382	351	322	296	272	251	233	217	203	192	182	174	166	159	152	69
581	547	511	475	441	409	379	351	326	302	282	263	247	233	220	208	198	187	178	70
635	603	569	535	501	469	439	410	384	360	338	318	299	282	266	251	237	223	210	71
681	653	623	591	560	529	500	472	446	422	399	378	357	338	319	301	283	267	250	72
718	695	669	641	613	586	559	533	508	485	463	441	420	400	379	358	337	317	298	73
744	726	705	682	658	635	612	589	568	546	526	506	485	464	442	420	396	373	351	74
757	744	728	711	693	675	656	638	620	603	585	567	548	527	506	483	458	434	409	75
757	750	739	728	715	703	690	677	664	651	637	622	606	587	567	544	520	494	467	76
746	743	738	732	725	718	712	704	697	688	679	668	655	639	622	601	578	553	527	77
725	725	724	724	722	721	720	718	717	714	710	704	695	683	669	651	630	607	581	78
695	698	701	704	707	711	715	720	723	726	728	727	723	716	706	691	674	652	629	79
658	663	669	675	682	690	700	709	718	726	733	737	738	736	730	720	706	688	668	80
617	623	631	640	650	661	674	688	702	715	726	735	741	744	743	737	727	713	696	81
573	580	590	600	611	626	641	659	676	693	709	723	733	740	744	742	737	727	714	82
527	536	546	557	570	586	604	624	643	664	683	701	715	727	735	737	736	730	721	83
483	492	502	514	528	545	564	585	607	630	651	672	690	705	717	723	726	724	719	84
442	450	460	472	486	504	523	545	568	592	615	639	659	677	692	702	708	710	708	85
404	412	421	433	447	464	484	505	529	553	578	603	625	646	663	676	685	690	691	86
372	378	387	398	411	428	447	468	491	516	541	567	590	612	632	646	658	666	670	87
345	350	357	367	379	395	413	434	457	481	506	532	556	579	599	616	630	639	646	88
324	328	333	342	353	367	384	404	426	449	474	499	524	547	568	587	602	613	622	89
309	312	316	323	332	344	360	378	399	422	446	471	495	518	540	559	575	588	598	90
300	301	304	309	316	327	340	357	377	398	421	445	469	493	515	535	552	566	577	91
294	294	296	300	305	314	325	340	358	378	400	424	447	471	493	514	532	547	558	92
292	291	293	295	298	305	314	327	343	361	382	405	428	452	475	495	514	530	543	93
291	290	291	292	294	299	306	317	331	347	367	389	412	435	458	480	499	516	530	94
291	291	291	292	292	295	301	309	320	335	353	374	396	419	443	465	485	504	520	95
290	291	292	292	291	292	296	302	311	324	341	360	381	404	428	451	473	492	509	96
288	290	292	292	291	291	293	297	303	314	328	346	366	389	412	436	459	480	498	97
286	289	291	292	290	289	289	292	296	304	316	332	351	373	396	420	443	465	485	98
283	287	290	291	289	287	286	286	289	295	304	318	335	356	379	402	426	449	470	99
278	284	288	289	288	285	283	281	282	285	293	305	320	339	360	383	407	430	452	100
273	280	285	287	286	283	279	277	275	276	282	291	304	321	341	363	386	409	431	101
266	275	281	285	283	280	276	272	269	267	270	278	289	304	322	342	364	387	408	102
260	270	277	281	280	276	272	267	262	259	260	265	274	286	303	321	342	363	384	103
252	263	271	275	275	272	267	261	255	250	249	252	259	269	284	300	320	340	360	104
245	256	264	269	269	266	261	254	247	241	238	239	244	252	265	280	297	316	334	105
238	249	257	262	263	260	254	247	239	232	227	225	228	235	245	257	275	292	309	106
232	243	250	255	256	253	247	238	229	221	215	211	212	217	225	236	251	267	283	107
228	238	245	249	249	246	239	230	220	210	203	197	195	198	204	214	227	242	257	108
227	236	242	245	244	240	232	222	211	200	190	182	178	178	183	190	202	215	230	109
228	237	242	243	242	237	228	216	204	191	180	169	163	160	162	168	177	189	202	110
231	239	244	245	242	237	227	214	200	186	172	159	149	144	143	146	153	162	175	111
235	243	248	249	247	240	230	216	200	184	168	153	140	132	127	127	131	138	148	112
238	248	254	255	254	247	236	222	205	187	170	152	136	124	116	112	113	117	125	113
240	251	258	262	262	256	246	232	214	196	176	156	138	123	111	104	100	101	106	114
239	251	261	266	269	265	257	244	227	208	188	166	146	128	113	102	94	91	92	115
234	248	260	268	273	273	268	256	241	223	203	180	159	138	120	106	95	88	85	116
225	240	254	266	274	277	275	268	255	239	219	197	175	153	133	117	102	92	86	117
214	229	244	258	270	277	279	275	266	253	235	214	193	171	150	131	115	102	92	118
203	216	231	247	261	271	277	278	273	263	248	230	210	189	168	147	130	116	103	119
192	203	218	233	248	261	271	276	275	269	257	242	225	205	185	165	147	131	117	120

The quantities tabulated are in units of the sixth decimal of the day.

Inequalities of the Fundamental Argument—Factor to be multiplied by m—Continued.

TABLE XXXIII.

5 A.	d. o	d. 120	d. 240	d. 360	d. 480	d. 600	d. 720	d. 840	d. 960	d. 1080	d. 1200	d. 1320	d. 1440	d. 1560	d. 1680	d. 1800	d. 1920	d. 2040	d. 2160
0	282	269	257	245	234	224	217	211	209	210	215	222	233	246	262	279	297	315	333
2	315	300	286	270	256	242	229	219	210	206	204	207	213	222	234	248	264	282	300
4	347	332	315	297	279	261	243	227	214	203	196	193	194	198	207	218	232	249	267
6	379	363	345	325	303	281	259	238	218	202	189	180	176	176	180	189	201	216	234
8	411	395	376	353	328	302	276	250	225	203	184	170	160	156	156	161	170	184	201
10	442	426	405	381	354	324	294	263	233	205	181	162	147	138	134	135	142	153	170
12	472	456	434	408	379	347	312	277	242	210	181	156	136	122	114	112	115	125	140
14	499	484	462	435	404	369	331	292	253	216	182	153	128	109	97	91	91	99	112
16	525	510	488	460	428	391	351	308	265	224	186	151	122	99	83	73	70	75	87
18	547	533	512	484	450	412	369	324	279	234	191	153	119	92	72	59	53	55	65
20	567	554	533	505	472	432	388	341	292	244	198	156	119	88	64	47	39	38	46
22	582	571	551	524	490	450	406	357	306	256	207	162	121	87	60	40	28	25	30
24	595	585	567	540	507	467	422	372	321	269	218	170	127	89	59	36	21	16	19
26	603	595	578	553	521	482	437	387	335	282	229	179	134	94	61	36	18	10	11
28	608	601	586	563	532	494	450	400	348	295	242	191	143	102	67	39	19	9	7
30	608	604	591	569	540	503	461	412	361	308	255	203	155	112	75	46	24	11	7
32	605	602	591	572	545	510	469	423	373	320	268	216	168	125	87	55	32	17	11
34	598	597	588	571	546	514	475	431	383	333	281	230	182	139	100	68	44	27	19
36	587	588	582	567	545	515	479	438	392	344	294	245	198	155	116	84	58	40	30
38	574	576	571	559	540	513	480	442	399	354	307	260	215	172	134	101	75	56	45
40	557	561	558	548	532	508	479	444	405	363	319	274	231	191	153	121	95	75	63
42	537	543	542	535	521	501	475	444	409	371	330	289	248	210	174	143	117	96	83
44	515	522	523	518	507	491	469	442	411	377	341	303	265	229	195	165	140	120	105
46	492	499	502	499	492	479	461	439	412	382	350	316	282	249	218	189	165	145	130
48	466	474	479	479	474	465	451	433	411	386	358	329	299	269	240	213	190	171	155
50	440	448	454	456	454	449	439	426	409	389	365	340	315	288	262	238	217	198	182
52	412	422	428	433	434	432	420	417	405	390	372	351	330	307	285	263	243	225	210
54	384	394	402	408	412	413	412	408	400	390	377	361	344	326	307	288	270	253	238
56	357	366	375	383	389	394	397	397	395	390	381	371	358	344	328	312	296	281	266
58	329	339	348	358	367	375	382	386	388	388	385	379	371	361	349	336	322	308	294
60	301	311	322	333	344	355	366	375	382	386	388	387	383	377	369	359	348	335	322
62	275	285	296	308	322	336	350	363	374	384	390	394	395	393	388	381	372	361	349
64	249	259	270	284	300	317	334	351	367	381	392	401	406	408	406	402	396	386	375
66	224	234	246	261	279	299	319	340	360	378	394	406	416	422	424	423	418	410	399
68	201	210	223	240	259	281	305	329	353	375	395	412	425	435	440	442	440	433	423
70	179	188	201	219	240	265	291	319	346	372	396	417	434	447	456	460	460	454	445
72	158	167	181	200	223	249	278	308	339	369	396	421	442	458	470	477	478	475	466
74	139	148	162	182	206	234	266	299	333	366	397	425	449	468	483	492	496	493	486
76	121	130	145	165	191	221	254	290	327	363	397	428	455	478	495	506	512	510	503
78	105	114	129	150	177	208	244	282	321	360	397	431	461	486	505	519	526	526	520
80	91	100	115	137	164	197	234	274	316	357	396	433	465	493	515	530	538	540	534
82	78	87	102	125	153	187	225	267	310	354	395	434	469	498	522	539	549	551	547
84	67	76	92	114	143	178	217	260	305	350	393	434	471	502	528	547	558	562	558
86	59	67	83	106	135	170	210	254	299	346	391	433	472	505	532	552	565	569	566
88	52	60	76	98	128	163	203	247	294	341	387	431	471	505	534	555	569	575	573
90	48	55	70	92	122	157	197	241	288	336	383	428	468	504	534	556	572	579	578
92	46	53	67	89	117	152	191	235	282	330	377	423	464	501	531	555	571	580	580
94	46	52	66	87	114	148	187	230	276	324	371	416	458	495	527	551	569	578	579
96	49	54	67	87	113	145	182	224	269	316	363	408	450	487	519	545	563	574	576
98	54	58	70	88	113	143	179	219	263	308	354	398	440	477	509	535	555	567	571
100	62	65	75	92	114	142	176	214	256	299	344	387	427	465	497	524	544	557	562
102	73	75	83	97	118	143	174	210	249	290	332	374	413	450	482	509	530	544	551
104	86	86	93	105	123	146	173	206	242	280	320	359	398	433	464	491	513	528	537
106	102	101	105	115	130	149	174	203	235	270	307	344	380	414	445	471	493	510	520
108	121	118	120	127	139	155	175	200	229	260	293	327	361	393	423	449	471	488	500
110	143	138	138	142	150	162	178	199	223	250	280	310	341	371	399	424	446	464	477
112	167	160	158	158	163	171	183	199	218	240	266	292	320	347	373	398	419	438	453
114	193	185	180	177	178	181	189	200	214	231	252	274	298	322	346	369	391	410	425
116	222	211	203	198	194	196	202	211	223	239	256	276	297	319	340	360	379	396	396
118	251	240	229	220	213	208	206	206	209	216	226	239	254	272	290	309	329	348	365
120	282	269	257	245	234	224	217	211	209	210	215	222	233	246	262	279	297	315	333

The horizontal argument of this table is Arg. I.

Inequalities of the Fundamental Argument—Factor to be multiplied by m—Continued.

TABLE XXXIII—Continued.

d. 2280	d. 2400	d. 2520	d. 2640	d. 2760	d. 2880	d. 3000	d. 3120	d. 3240	d. 3360	d. 3480	d. 3600	d. 3720	d. 3840	d. 3960	d. 4080	d. 4200	d. 4320	d. 4440	5 A.
351	367	380	391	399	403	405	404	401	396	389	381	372	361	349	337	324	310	296	0
319	337	354	369	381	391	398	403	405	404	404	400	395	388	379	368	356	342	327	2
287	307	327	345	362	377	389	399	407	413	417	418	417	414	408	399	388	375	359	4
254	276	299	321	342	361	379	395	408	419	428	434	438	438	435	430	420	407	391	6
222	245	270	295	321	345	368	389	407	424	438	449	457	461	462	458	450	438	422	8
191	215	242	270	299	327	355	381	405	427	445	461	474	482	486	485	479	468	452	10
161	185	214	244	276	309	341	372	400	427	451	472	488	501	508	510	506	496	480	12
132	157	186	219	254	290	326	361	395	426	454	479	500	516	527	531	530	521	506	14
106	131	161	195	232	271	310	349	387	423	456	485	510	529	543	550	551	544	530	16
82	106	137	172	211	252	294	337	378	418	455	487	516	539	556	566	569	564	551	18
62	85	115	150	190	234	279	324	368	411	451	488	519	546	565	578	583	580	569	20
44	66	95	131	172	216	263	310	358	403	446	485	520	549	571	587	594	593	584	22
31	51	79	114	155	200	248	297	346	394	439	481	518	549	574	591	601	602	594	24
21	39	66	100	140	185	234	284	334	384	430	474	513	546	573	592	604	607	601	26
15	31	56	89	128	173	221	271	322	372	420	465	506	540	569	590	603	608	604	28
12	27	49	81	118	162	209	259	310	361	409	455	496	532	562	584	599	605	604	30
14	26	47	76	112	153	200	248	299	349	397	443	484	521	551	575	591	599	599	32
20	29	47	74	108	147	192	239	288	337	384	430	471	507	538	562	579	589	591	34
29	36	52	76	107	144	186	231	278	325	371	415	456	492	523	547	565	576	579	36
41	46	59	80	109	143	182	224	269	314	358	400	440	475	505	529	548	559	564	38
57	60	70	88	113	144	180	219	261	303	345	385	423	456	486	510	528	540	546	40
76	76	84	99	120	148	180	216	254	293	332	370	405	437	465	488	506	519	526	42
97	95	100	112	130	154	182	214	249	284	318	354	387	416	443	465	482	495	503	44
120	116	119	128	142	162	186	214	244	276	308	339	368	396	420	440	457	470	479	46
145	139	140	145	156	172	192	215	241	269	296	324	350	374	396	415	431	444	453	48
171	164	162	165	172	184	199	218	239	262	286	309	332	353	373	390	404	417	426	50
198	190	185	185	189	197	208	222	239	257	276	295	314	332	349	364	377	389	398	52
225	216	209	206	207	211	217	227	239	252	267	282	297	311	325	338	350	361	371	54
253	243	234	228	226	225	228	232	240	248	258	269	280	291	302	313	323	333	343	56
281	269	259	251	244	241	239	239	241	245	250	257	264	271	279	288	297	306	315	58
308	296	284	273	264	256	250	246	243	242	243	245	248	252	257	263	271	279	288	60
335	322	308	295	282	271	261	252	245	240	236	234	233	234	236	240	246	253	262	62
361	347	332	316	301	286	272	259	248	238	230	224	219	217	216	217	222	228	237	64
386	371	354	337	319	301	283	266	251	237	224	214	206	200	197	196	199	205	213	66
410	394	376	357	336	315	294	273	253	235	219	205	193	184	178	176	177	182	191	68
432	416	397	375	352	328	304	279	256	234	214	196	181	169	161	157	157	161	170	70
453	436	416	393	367	341	313	286	259	233	209	188	170	156	145	139	138	142	150	72
473	455	434	409	382	352	322	291	261	232	205	181	160	143	131	123	121	124	132	74
491	473	451	424	395	363	330	297	264	231	201	174	151	131	117	108	105	107	116	76
507	489	466	438	407	373	338	302	266	231	198	168	142	121	105	95	91	93	101	78
522	504	480	451	418	383	345	307	268	231	196	164	135	112	95	83	78	80	88	80
535	516	492	462	428	391	352	312	271	232	194	160	130	105	86	74	68	69	77	82
546	528	503	472	437	399	358	316	274	233	194	158	126	100	79	66	59	60	68	84
556	537	512	482	446	406	365	321	277	235	194	157	123	96	74	60	53	53	61	86
563	545	520	489	453	413	370	326	281	237	196	157	123	94	72	57	48	48	55	88
568	551	526	496	459	419	376	331	286	241	198	159	124	94	71	55	47	45	52	90
571	555	531	501	465	425	381	336	291	246	203	163	127	97	73	57	47	45	51	92
572	557	534	504	469	430	387	342	297	252	209	169	133	102	78	60	50	48	53	94
570	557	535	507	473	434	392	348	303	259	216	176	140	110	85	67	56	53	57	96
566	554	534	507	475	438	397	354	310	267	225	186	150	119	95	76	65	60	63	98
559	549	531	507	476	440	402	360	318	276	236	197	162	132	107	88	76	71	72	100
550	542	526	504	476	443	406	367	327	287	247	210	177	147	122	103	90	84	84	102
538	532	519	499	474	444	410	373	336	298	261	225	193	164	140	121	107	100	98	104
523	520	510	493	471	444	413	380	345	310	275	242	211	184	160	141	127	118	115	106
506	505	498	485	466	442	415	386	354	322	291	260	231	205	183	154	149	140	135	108
485	488	484	474	459	440	417	391	364	335	307	279	253	229	207	189	174	163	157	110
462	468	467	461	451	436	417	396	373	348	324	299	276	254	234	216	201	189	181	112
437	445	448	447	441	430	416	400	381	361	340	320	299	280	261	245	230	217	207	114
410	421	428	430	428	423	414	402	389	373	357	340	326	307	290	275	260	247	235	116
381	394	405	411	414	414	410	404	395	385	374	361	348	334	320	306	292	278	265	118
351	367	380	391	399	403	405	404	401	396	389	381	372	361	349	337	324	310	296	120

The quantities tabulated are in units of the sixth decimal of the day.

Inequalities of the Fundamental Argument—Factor to be multiplied by m^2 .

TABLE XXXIV.

A.	d. 0	d. 120	d. 240	d. 360	d. 480	d. 600	d. 720	d. 840	d. 960	d. 1080	d. 1200	d. 1320	d. 1440	d. 1560	d. 1680	d. 1800	d. 1920	d. 2040	d. 2160
0	81	97	116	135	156	175	194	213	230	245	258	268	276	280	281	278	271	261	248
1	67	84	104	125	146	168	189	209	228	245	260	271	280	285	287	285	279	269	256
2	61	78	97	117	139	161	181	202	222	239	254	266	275	281	283	283	278	269	257
3	63	78	95	114	134	154	173	192	210	227	241	252	261	267	270	270	267	260	250
4	73	85	99	115	131	148	164	180	196	209	221	231	239	245	249	249	247	243	236
5	90	98	108	119	131	143	155	167	179	189	198	205	211	216	219	221	221	219	215
6	112	116	122	127	134	141	147	154	160	166	171	176	179	182	186	187	189	189	189
7	138	138	138	138	139	140	141	142	142	143	144	145	146	147	149	151	154	157	161
8	166	161	156	151	146	141	136	131	126	122	118	115	113	113	113	116	119	125	131
9	193	184	174	164	154	143	132	122	112	103	95	89	84	81	81	83	87	94	104
10	217	204	191	176	162	146	131	116	101	88	77	67	60	55	54	55	60	69	80
11	236	221	205	187	168	149	130	112	94	78	64	52	43	37	35	36	41	50	62
12	250	233	214	194	174	152	131	111	91	74	58	45	34	27	24	25	30	39	52
13	256	239	220	199	177	155	133	112	92	74	58	45	34	27	24	24	29	38	51
14	256	238	220	199	178	157	136	116	97	80	65	52	43	36	33	33	38	46	57
15	249	232	215	196	177	157	139	121	104	90	77	67	59	53	51	52	50	62	73
16	235	221	206	190	173	157	142	128	115	104	94	87	81	78	77	78	81	87	95
17	218	206	194	181	169	157	147	136	128	121	115	111	109	107	108	109	113	117	123
18	197	188	180	171	163	156	151	146	142	140	138	138	139	140	143	145	148	151	155
19	174	169	165	161	158	156	156	155	157	160	163	166	170	175	178	181	184	186	187
20	153	152	151	152	153	156	161	166	172	179	187	194	201	208	213	217	219	220	219
21	134	136	139	144	150	158	167	177	187	198	209	220	229	238	244	249	251	250	247
22	117	123	130	139	149	161	174	188	202	216	229	242	253	263	271	275	277	275	271
23	106	115	125	138	151	166	182	198	214	230	246	260	273	283	290	295	296	293	287
24	100	111	124	139	155	172	190	208	226	243	259	273	285	295	303	307	307	304	297
25	99	112	127	144	161	179	198	216	234	251	267	280	292	301	307	310	310	306	298
26	104	118	134	151	169	187	205	223	240	256	270	282	292	299	304	306	305	300	292
27	114	128	144	161	178	195	212	228	243	256	268	278	285	291	294	294	293	288	280
28	128	141	156	172	187	202	217	230	242	253	261	268	273	276	278	277	274	269	262
29	145	157	170	183	196	208	219	230	238	245	251	254	257	257	257	254	251	246	240
30	165	174	184	194	204	213	220	226	231	234	236	237	236	234	232	229	225	221	216
31	186	192	198	205	210	215	218	221	222	221	219	216	213	209	205	201	198	195	192
32	206	209	212	214	215	215	214	212	209	205	200	195	190	184	179	174	171	169	168
33	226	225	223	221	218	213	208	203	196	188	181	173	166	159	154	149	147	146	147
34	243	239	233	226	219	210	201	192	182	172	162	153	144	137	131	127	126	127	130
35	257	249	240	229	218	206	194	181	169	157	145	135	126	119	114	110	110	112	117
36	268	257	244	231	216	201	186	172	158	144	132	122	113	106	101	99	100	104	110
37	274	260	245	230	213	197	180	165	150	136	123	113	105	98	95	94	96	101	108
38	274	260	244	228	210	193	176	160	145	132	120	111	103	98	95	95	98	104	112
39	270	256	241	224	207	191	175	160	145	133	123	114	108	104	103	103	107	113	120
40	261	249	234	220	204	190	175	162	150	140	131	125	120	117	117	118	122	127	133
41	247	237	226	214	202	190	179	169	159	152	145	141	138	136	137	138	141	145	150
42	229	223	216	208	200	192	185	178	172	168	164	162	161	160	161	163	165	167	170
43	208	207	204	201	198	195	192	190	188	187	187	188	187	188	189	190	191	191	191
44	185	188	191	193	196	199	201	203	206	208	211	215	216	218	218	219	218	216	213
45	162	170	177	186	194	202	209	216	223	230	236	240	244	247	247	247	244	240	233
46	139	151	164	177	191	204	217	229	240	250	258	265	270	273	274	272	268	261	252
47	118	134	152	170	188	205	222	238	253	266	277	286	291	295	296	293	288	279	267
48	101	120	141	162	184	205	225	244	261	277	290	300	307	311	311	308	302	291	278
49	89	110	133	156	179	203	225	246	265	282	296	307	314	319	319	316	309	298	283
50	84	104	127	151	175	199	222	243	263	280	294	306	313	318	318	315	308	297	283
51	84	104	125	148	171	193	215	236	255	271	285	296	303	307	308	305	299	289	276
52	92	109	127	147	167	187	206	224	242	256	268	277	284	288	289	287	282	274	264
53	106	119	133	148	164	180	195	209	223	234	244	252	257	261	262	261	258	252	245
54	126	133	143	152	162	172	183	192	201	209	216	221	225	227	229	229	227	225	221
55	149	151	155	158	162	166	170	174	178	181	184	186	188	189	191	192	193	193	194
56	175	171	169	166	163	161	158	156	154	152	151	150	149	150	151	153	156	160	165
57	202	193	184	175	166	156	148	140	132	125	120	115	112	111	112	115	120	127	135
58	226	213	199	185	169	154	139	126	113	101	92	84	79	77	77	80	86	95	107
59	247	231	212	193	173	153	133	115	98	82	69	59	52	48	48	51	58	69	83
60	263	244	223	200	176	153	130	108	88	69	54	41	32	27	26	29	37	48	64

The horizontal argument of this table is Arg. I.

Inequalities of the Fundamental Argument—Factor to be multiplied by m^2 .

TABLE XXXIV—Continued.

d. 2280	d. 2400	d. 2520	d. 2640	d. 2760	d. 2880	d. 3000	d. 3120	d. 3240	d. 3360	d. 3480	d. 3600	d. 3720	d. 3840	d. 3960	d. 4080	d. 4200	d. 4320	d. 4440	A.
231	212	191	169	146	123	102	83	66	54	44	40	39	43	51	63	77	95	115	0
239	220	198	175	150	127	104	83	65	49	39	32	30	33	41	52	67	85	106	1
241	223	202	180	156	133	110	89	70	54	42	35	32	33	40	50	64	81	102	2
237	221	203	183	162	141	120	100	82	67	55	47	43	44	48	57	69	85	103	3
226	214	200	184	167	150	133	116	101	87	77	69	64	64	67	73	82	95	110	4
209	202	193	183	172	160	147	135	124	113	105	98	93	92	93	96	102	111	122	5
188	186	183	179	174	169	163	156	149	143	137	132	128	125	125	125	128	133	138	6
164	167	171	174	175	177	177	177	176	174	171	169	166	163	161	159	158	158	158	7
139	148	157	166	175	183	191	197	201	204	206	206	204	202	199	194	189	184	179	8
115	128	143	158	173	188	201	214	224	232	237	240	240	238	234	228	220	211	201	9
94	111	130	150	170	190	210	227	242	254	264	269	271	270	265	258	247	235	221	10
78	98	120	143	167	191	214	236	255	271	283	291	295	295	290	281	269	255	237	11
69	90	113	137	164	190	216	240	262	280	295	305	310	310	306	297	285	269	249	12
67	87	110	135	162	188	215	240	263	282	298	309	315	316	312	304	291	275	255	13
73	92	113	136	161	186	212	236	258	277	292	303	310	312	309	301	290	274	254	14
86	102	120	141	162	184	207	228	247	265	279	289	296	298	296	289	279	265	247	15
106	118	133	148	165	182	200	217	234	248	259	268	274	276	274	269	261	249	234	16
130	139	148	159	170	182	194	206	217	227	235	242	245	247	246	242	236	227	216	17
158	162	167	171	177	182	187	193	199	204	208	211	213	214	213	211	207	201	194	18
188	187	186	185	184	183	181	181	180	180	180	180	180	179	178	177	176	173	171	19
216	211	206	199	192	184	176	170	163	158	153	150	147	146	144	145	145	145	147	20
241	233	223	212	199	186	172	160	148	138	129	122	118	114	114	115	117	120	125	21
263	252	238	222	206	187	169	152	136	122	110	100	93	89	88	89	94	98	107	22
278	264	248	230	210	188	168	147	128	111	96	84	76	71	70	72	76	83	94	23
286	271	254	234	213	189	166	144	123	104	88	75	66	61	59	61	67	76	88	24
287	272	255	235	213	190	166	144	123	103	87	74	64	59	57	60	66	75	87	25
281	267	251	231	211	189	167	146	126	107	92	79	70	65	64	66	72	81	93	26
270	257	242	225	207	188	169	150	132	116	102	91	84	79	78	80	86	94	105	27
253	243	230	217	202	187	171	156	142	129	118	109	103	99	99	101	106	113	122	28
233	226	217	207	196	186	175	164	154	145	137	131	127	124	124	126	130	135	142	29
212	207	201	196	190	185	180	174	168	164	159	156	154	153	153	154	156	160	164	30
189	188	187	186	185	185	185	184	184	183	183	182	182	182	182	183	184	185	186	31
169	171	174	177	181	186	191	195	199	203	206	208	210	211	211	210	210	209	207	32
151	156	162	170	179	188	198	206	215	222	228	232	235	237	237	236	233	230	225	33
136	144	154	165	178	191	205	217	228	238	247	253	257	259	258	256	252	246	239	34
125	136	149	163	178	195	211	226	240	252	262	269	274	276	275	271	266	258	249	35
120	132	146	163	180	198	216	233	248	262	273	280	285	287	285	281	273	264	253	36
119	132	147	165	183	202	220	237	253	266	278	285	290	291	288	283	275	265	252	37
123	136	151	168	185	204	222	238	253	266	276	283	287	288	285	279	271	260	247	38
131	142	157	172	188	205	221	235	249	260	269	275	278	278	275	269	261	250	238	39
142	153	165	177	190	204	217	229	240	249	256	261	263	262	259	254	246	237	226	40
157	164	173	182	191	201	210	218	226	233	238	241	242	241	239	234	228	220	212	41
173	177	182	186	191	196	200	204	209	212	215	216	217	216	214	211	207	202	196	42
191	191	190	190	189	189	188	188	189	189	189	189	189	188	187	186	184	182	181	43
208	204	199	193	187	182	176	171	168	164	162	160	159	159	160	160	162	163	166	44
225	217	206	195	184	173	163	154	146	140	135	132	131	131	133	136	140	146	152	45
240	227	213	197	181	166	151	138	126	117	110	106	104	105	109	114	122	131	141	46
253	236	218	198	179	159	140	124	110	98	89	84	82	84	89	97	107	119	133	47
262	242	222	199	177	155	133	114	98	84	74	68	67	69	75	84	96	111	128	48
266	246	224	200	176	152	130	109	92	77	67	60	58	61	67	78	91	107	127	49
266	246	224	201	177	153	130	110	92	78	67	60	58	61	68	78	92	109	129	50
261	242	222	201	179	156	135	116	99	85	75	69	67	69	76	86	99	116	135	51
250	235	218	200	182	163	144	128	113	101	91	86	84	86	91	100	112	127	144	52
235	224	212	199	185	170	157	144	133	123	115	110	109	110	114	121	131	143	156	53
217	211	204	196	188	180	172	164	156	149	144	141	140	140	143	147	154	162	171	54
194	194	194	193	192	190	188	185	182	179	177	176	175	175	175	177	180	184	189	55
170	176	182	188	193	198	203	206	209	211	212	212	212	211	210	209	208	208	207	56
145	157	169	182	194	206	217	226	234	241	245	247	248	247	245	241	237	231	226	57
122	138	155	174	193	211	228	243	256	267	274	279	281	280	277	271	263	254	243	58
101	120	142	166	189	213	235	255	272	287	298	305	308	308	303	296	286	273	258	59
84	106	131	157	184	211	237	261	282	300	313	322	327	327	323	315	303	288	270	60

The quantities tabulated are in units of the eighth decimal of the day.

Inequalities of the Fundamental Argument—Factor to be multiplied by m^2 —Continued.

TABLE XXXIV—Continued.

A.	d. 0	d. 120	d. 240	d. 360	d. 480	d. 600	d. 720	d. 840	d. 960	d. 1080	d. 1200	d. 1320	d. 1440	d. 1560	d. 1680	d. 1800	d. 1920	d. 2040	d. 2160
60	263	244	223	200	176	153	130	108	88	69	54	41	32	27	26	29	37	48	64
61	272	252	229	205	180	154	129	105	83	63	46	32	22	16	14	17	24	36	52
62	273	253	231	207	181	155	130	106	84	63	46	32	21	15	13	15	21	32	48
63	267	248	227	205	181	157	133	111	89	70	53	40	30	23	21	22	28	37	51
64	253	237	219	200	179	158	138	118	99	83	68	56	47	41	39	40	44	51	62
65	234	221	207	191	175	159	143	127	112	100	88	79	72	67	65	65	67	72	80
66	209	201	191	180	170	158	148	137	128	119	112	106	101	98	96	96	97	100	104
67	182	178	173	168	163	158	153	148	144	141	138	135	134	132	132	131	131	131	131
68	155	154	154	154	156	157	159	160	162	163	165	167	167	167	167	167	166	163	160
69	129	132	137	142	148	155	161	168	175	181	188	193	197	200	201	201	199	195	189
70	106	113	122	131	142	153	165	177	188	199	209	217	225	229	231	231	229	223	215
71	89	99	110	123	138	153	168	184	199	212	225	236	245	251	255	255	252	246	236
72	78	90	104	119	136	154	171	189	206	222	236	249	259	266	270	271	268	262	251
73	75	88	102	119	137	156	174	193	211	227	243	256	266	273	278	279	276	269	259
74	79	92	107	123	141	159	177	195	212	228	243	255	265	272	276	277	275	269	259
75	90	102	116	131	147	164	180	196	212	226	238	249	258	263	267	268	265	260	252
76	107	117	129	142	156	169	183	196	208	220	229	238	244	248	251	251	249	245	239
77	128	136	146	155	165	176	186	195	203	211	217	222	226	228	229	229	228	225	220
78	152	158	164	170	176	182	188	192	197	200	202	204	205	205	204	203	202	201	199
79	177	180	182	185	186	188	189	189	189	188	186	184	182	180	178	176	176	176	176
80	201	201	200	198	196	193	189	185	181	176	170	165	160	156	153	151	150	151	153
81	223	220	215	210	203	196	189	180	172	164	155	147	140	135	130	128	127	130	134
82	241	235	227	218	208	198	187	176	164	153	142	132	124	117	112	110	110	113	119
83	254	245	235	223	211	198	184	170	157	144	132	121	112	105	100	98	99	103	110
84	262	251	239	225	210	196	180	166	151	138	125	114	105	99	94	92	94	99	107
85	264	252	238	223	208	192	177	162	148	134	122	112	104	99	95	94	97	102	111
86	261	248	234	219	204	188	173	159	146	134	124	115	109	105	103	103	106	113	121
87	253	240	227	212	198	184	171	158	147	138	130	124	119	117	117	119	122	129	137
88	244	229	217	204	192	180	170	160	152	145	140	137	135	135	137	139	144	150	157
89	225	215	206	196	187	178	170	164	160	156	154	154	155	157	160	164	169	174	180
90	207	201	194	188	182	177	173	171	170	170	172	175	178	182	187	192	196	201	205
91	189	185	182	180	179	178	179	180	183	187	192	197	203	209	215	220	224	227	229
92	170	170	172	174	177	181	186	192	198	206	213	221	229	236	243	247	251	253	252
93	152	157	163	170	177	186	195	205	215	225	235	245	254	262	268	273	275	275	272
94	136	145	156	167	179	192	205	218	231	244	256	267	277	285	291	294	295	293	288
95	124	137	151	166	182	199	215	231	246	261	274	286	296	303	309	311	310	306	298
96	115	131	148	167	186	205	224	242	259	274	288	300	310	317	321	322	319	313	304
97	110	128	148	169	190	211	232	250	268	284	298	309	318	323	326	326	322	314	303
98	110	130	150	172	194	216	237	255	273	288	301	311	319	323	324	322	317	308	297
99	115	134	155	176	198	219	239	257	273	287	298	307	313	315	315	312	306	297	285
100	124	142	161	181	200	219	237	253	267	279	289	295	299	300	299	295	289	280	269
101	138	153	169	186	202	218	233	246	257	266	273	277	279	278	276	272	266	258	248
102	156	168	179	192	204	215	225	234	242	247	251	253	253	251	248	244	239	232	225
103	177	184	191	197	204	210	216	220	223	225	225	224	222	220	216	212	208	204	200
104	200	201	202	204	204	205	205	204	202	200	197	194	190	186	182	179	177	175	174
105	224	219	215	210	204	199	193	187	181	175	168	162	157	152	149	146	145	146	148
106	246	237	227	216	205	194	182	172	161	151	141	133	126	121	117	115	116	119	125
107	266	253	237	222	205	189	173	158	143	129	117	107	99	93	89	89	91	96	105
108	282	265	246	227	206	186	166	147	129	113	99	87	78	71	68	68	72	79	89
109	293	274	253	231	207	185	162	141	121	103	87	74	64	58	54	55	59	67	78
110	297	278	256	233	209	185	161	139	118	99	83	69	59	53	49	50	54	62	74
111	295	276	255	233	209	186	163	141	121	102	86	73	63	57	53	53	57	65	75
112	285	269	250	230	209	188	167	147	128	112	97	85	76	70	66	66	69	74	83
113	268	256	241	225	208	190	173	156	141	127	114	104	96	91	87	86	87	91	97
114	246	238	228	217	205	192	180	168	156	146	137	129	123	118	114	113	112	113	116
115	218	215	211	206	200	193	186	180	173	167	162	157	153	149	146	144	141	140	139
116	188	191	192	193	193	193	192	191	190	189	188	186	184	182	179	176	173	168	164
117	158	165	171	178	185	191	196	201	206	210	212	214	215	214	212	209	204	197	189
118	128	139	151	163	175	187	198	209	219	227	233	239	242	243	241	238	232	223	213
119	102	116	132	148	165	182	197	213	227	239	249	257	263	265	265	262	255	245	233
120	81	97	116	135	156	175	194	213	230	245	258	268	276	280	281	278	271	261	248

The horizontal argument of this table is Arg. I.



Inequalities of the Fundamental Argument—Factor to be multiplied by m^2 —Continued

TABLE XXXIV—Continued.

d. 2280	d. 2400	d. 2520	d. 2640	d. 2760	d. 2880	d. 3000	d. 3120	d. 3240	d. 3360	d. 3480	d. 3600	d. 3720	d. 3840	d. 3960	d. 4080	d. 4200	d. 4320	d. 4440	A.
84	106	131	157	184	211	237	261	282	300	313	322	327	327	323	315	303	288	270	60
72	95	121	149	178	207	235	261	284	304	319	330	336	337	333	325	313	297	278	61
67	89	115	142	171	200	228	255	279	299	316	328	335	337	334	327	315	299	280	62
68	88	111	137	163	191	217	243	266	286	303	315	323	327	325	319	308	294	276	63
76	93	112	134	156	180	203	226	246	265	281	293	302	306	305	301	293	282	267	64
90	103	117	133	150	169	187	205	222	238	252	263	271	276	278	276	271	263	252	65
110	117	125	135	146	158	170	183	195	207	218	227	235	240	243	244	242	238	232	66
133	134	136	140	144	149	154	160	167	174	181	188	194	200	204	207	209	209	208	67
157	154	150	146	143	141	139	139	140	142	145	149	153	158	163	169	174	178	182	68
182	174	164	155	145	136	128	121	116	112	111	112	114	118	124	131	139	147	156	69
205	193	179	164	148	133	119	106	96	88	83	80	80	83	89	97	106	118	130	70
224	209	191	173	153	133	115	97	83	70	61	56	53	55	60	69	80	93	108	71
238	221	201	181	158	136	114	93	75	59	48	40	36	36	40	48	60	74	91	72
245	229	208	187	164	140	117	94	75	57	44	34	28	27	30	37	49	62	80	73
246	231	212	191	169	146	123	101	81	63	49	38	31	29	31	36	46	59	76	74
241	227	211	192	173	152	131	111	93	76	62	51	44	41	41	45	53	64	78	75
230	219	206	191	176	159	142	125	110	95	83	73	66	62	61	63	69	77	88	76
214	207	198	188	178	166	154	142	130	119	109	101	94	90	88	88	91	96	103	77
195	192	188	184	178	173	166	159	152	145	139	133	128	124	121	119	119	120	123	78
176	177	178	178	179	179	178	177	175	173	170	167	163	160	156	153	150	148	146	79
157	161	167	172	179	184	190	194	198	200	201	200	198	195	191	187	181	176	169	80
140	148	157	168	179	190	200	210	218	224	229	231	231	229	225	218	211	203	192	81
127	138	151	164	180	195	210	223	235	245	252	257	258	257	253	246	237	226	212	82
120	132	148	164	182	200	218	234	249	261	271	276	279	279	274	266	256	243	227	83
118	132	148	166	185	205	224	242	258	272	282	289	293	292	288	280	269	254	237	84
122	136	152	170	189	209	228	246	263	277	288	294	298	298	293	285	273	259	241	85
132	145	161	177	195	213	231	248	263	276	286	292	295	294	289	281	270	256	239	86
147	158	172	186	201	217	232	246	259	270	278	282	284	283	278	270	260	246	231	87
165	175	185	197	208	220	231	241	250	258	264	266	267	265	260	253	243	231	218	88
186	193	200	208	215	222	228	234	239	243	245	246	244	241	237	230	221	212	202	89
209	212	215	218	220	222	223	224	225	225	224	221	219	215	210	204	197	190	183	90
230	230	229	227	224	221	217	213	209	204	200	195	191	186	181	177	172	168	164	91
250	246	241	234	226	218	209	200	192	183	175	169	163	158	153	150	148	147	146	92
267	259	250	239	227	213	200	187	174	163	152	144	136	131	128	126	126	128	131	93
279	269	256	241	225	208	190	174	158	144	131	122	114	109	106	108	113	119	124	94
288	274	259	241	221	201	181	162	144	128	114	104	96	91	90	91	95	102	112	95
291	275	257	238	216	194	173	152	133	116	102	91	84	80	80	83	89	98	109	96
289	272	254	232	210	188	165	144	125	109	95	84	78	75	76	81	88	99	112	97
282	265	246	226	204	182	161	140	122	106	94	85	79	77	80	85	94	105	119	98
271	255	237	218	197	177	158	140	124	110	99	91	87	86	89	96	105	116	130	99
256	242	226	209	192	175	159	144	130	119	110	104	101	102	105	112	121	132	145	100
238	226	214	201	187	174	162	151	141	133	126	123	121	123	126	132	140	150	161	101
218	209	201	193	184	176	168	162	156	151	148	146	146	148	151	156	163	170	179	102
196	192	188	185	182	179	177	175	173	172	172	172	173	175	178	182	186	192	197	103
174	174	176	178	180	183	187	189	192	195	197	200	202	204	206	209	211	212	214	104
152	157	164	172	180	188	197	205	211	218	223	227	230	233	234	234	233	232	230	105
133	142	154	166	179	193	206	218	229	239	246	253	256	259	258	256	253	249	243	106
116	129	144	161	178	196	213	230	244	256	266	273	278	280	278	275	270	262	253	107
102	118	136	156	177	198	218	237	254	269	280	288	293	295	293	288	281	271	259	108
93	110	130	152	174	197	219	240	259	275	287	296	302	303	301	295	287	276	262	109
88	106	126	148	171	194	216	238	257	273	286	296	302	303	301	295	287	275	261	110
89	106	124	145	166	188	210	230	248	265	277	287	293	295	293	288	280	269	256	111
95	109	124	142	161	180	199	217	234	249	261	270	276	279	278	274	267	258	246	112
105	116	127	141	155	171	185	200	214	227	237	246	252	255	256	253	249	243	234	113
120	126	133	141	150	160	170	180	190	200	208	216	222	225	228	228	226	223	219	114
139	139	140	142	145	149	153	158	164	171	176	182	187	191	195	198	200	201	201	115
159	154	149	145	142	139	137	137	138	140	142	146	151	156	161	167	172	177	182	116
180	170	160	150	140	131	123	117	113	110	110	112	115	120	127	135	144	153	162	117
200	186	171	156	140	126	112	101	92	85	82	81	83	89	96	106	117	130	144	118
218	200	181	162	142	123	105	89	76	66	59	56	57	62	70	81	95	110	128	119
231	212	191	169	146	123	102	83	66	54	44	40	39	43	51	63	77	95	115	120

The quantities tabulated are in units of the eighth decimal of the day.

*Inequalities of the Fundamental Argument.*TABLE XXXV.—Factor to be multiplied by m^2 .

Arg. I.	Factor.	Arg. I.	Factor.
d.	d.	d.	d.
0	+0.00000698	2200	+0.00006595
40	614	2240	6667
80	542	2280	6730
120	481	2320	6785
160	433	2360	6831
200	398	2400	6868
240	375	2440	6895
280	364	2480	6912
320	366	2520	6920
360	380	2560	6918
400	406	2600	6906
440	444	2640	6884
480	494	2680	6853
520	555	2720	6811
560	627	2760	6759
600	710	2800	6697
640	803	2840	6626
680	906	2880	6544
720	1018	2920	6453
760	1139	2960	6353
800	1267	3000	6243
840	1404	3040	6124
880	1547	3080	5996
920	1697	3120	5860
960	1852	3160	5716
1000	2013	3200	5564
1040	2178	3240	5405
1080	2348	3280	5239
1120	2521	3320	5067
1160	2696	3360	4889
1200	2874	3400	4706
1240	3054	3440	4519
1280	3235	3480	4327
1320	3416	3520	4133
1360	3597	3560	3936
1400	3778	3600	3737
1440	3958	3640	3538
1480	4136	3680	3338
1520	4312	3720	3138
1560	4486	3760	2941
1600	4657	3800	2745
1640	4824	3840	2553
1680	4988	3880	2364
1720	5147	3920	2180
1760	5302	3960	2002
1800	5451	4000	1829
1840	5597	4040	1664
1880	5734	4080	1506
1920	5866	4120	1357
1960	5992	4160	1216
2000	6111	4200	1085
2040	6223	4240	964
2080	6328	4280	854
2120	6425	4320	755
2160	6514	4360	667
2200	+0.00006595	4400	+0.0000591

TABLE XXXVI.—Factor to be multiplied by m^2 .

Arg. I.	Factor.
d.	d.
0	+0.000000092
120	91
240	91
360	91
480	91
600	90
720	90
840	90
960	89
1080	89
1200	89
1320	89
1440	89
1560	88
1680	88
1800	88
1920	88
2040	89
2160	89
2280	89
2400	89
2520	90
2640	90
2760	90
2880	91
3000	91
3120	92
3240	92
3360	92
3480	92
3600	92
3720	92
3840	92
3960	92
4080	92
4200	92
4320	92
4440	+0.000000091

Heliocentric longitude.

TABLE XXXVII.—True anomaly + Reduction to the Ecliptic.

[The Argument of this table is the Fundamental Argument.]

Arg.	d. o	Log. D. M.	d. 4	Log. D. M.	d. 8	Log. D. M.	d. 12	Log. D. M.	d. 16	Log. D. M.
d.	° / "		° / "		° / "		° / "		° / "	
0	0 0 2.80	51842	0 22 2.51	51842	0 44 2.23	51842	1 6 1.93	51841	1 28 1.62	51841
20	1 50 1.28	51840	2 12 0.93	51839	2 34 0.54	51838	2 56 0.12	51837	3 17 59.65	51836
40	3 39 59.14	51834	4 1 58.58	51832	4 23 57.97	51830	4 45 57.29	51828	5 7 56.55	51826
60	5 29 55.74	51823	5 51 54.85	51820	6 13 53.88	51818	6 35 52.82	51815	6 57 51.68	51812
80	7 19 50.44	51809	7 41 49.10	51805	8 3 47.65	51802	8 25 46.09	51798	8 47 44.42	51795
100	9 9 42.63	51791	9 31 40.71	51787	9 53 38.66	51782	10 15 36.48	51777	10 37 34.15	51773
120	10 59 31.68	51768	11 21 29.06	51763	11 43 26.29	51758	12 5 23.36	51753	12 27 20.26	51747
140	12 49 16.99	51741	13 11 13.55	51735	13 33 9.93	51729	13 55 6.13	51723	14 17 2.14	51717
160	14 38 57.95	51710	15 0 53.56	51704	15 22 48.98	51697	15 44 44.18	51690	16 6 39.17	51683
180	16 28 33.95	51676	16 50 28.50	51668	17 12 22.83	51661	17 34 16.93	51653	17 56 10.79	51645
200	18 18 4.41	51637	18 39 57.78	51629	19 1 50.91	51620	19 23 43.77	51612	19 45 36.39	51603
220	20 7 28.73	51594	20 29 20.81	51585	20 51 12.62	51576	21 13 4.15	51567	21 34 55.40	51557
240	21 56 46.36	51548	22 18 37.03	51539	22 40 27.40	51529	23 2 17.48	51519	23 24 7.25	51509
260	23 45 56.71	51499	24 7 45.86	51488	24 29 34.69	51477	24 51 23.20	51466	25 13 11.39	51456
280	25 34 59.24	51444	25 56 46.76	51433	26 18 33.94	51422	26 40 20.78	51411	27 2 7.27	51399
300	27 23 53.41	51387	27 45 39.19	51375	28 7 24.61	51363	28 29 9.67	51351	28 50 54.36	51338
320	29 12 38.68	51326	29 34 22.62	51314	29 56 6.18	51301	30 17 49.36	51288	30 39 32.15	51275
340	31 1 14.54	51262	31 22 56.54	51248	31 44 38.14	51235	32 6 19.34	51222	32 28 0.12	51208
360	32 49 40.50	51194	33 11 20.46	51180	33 32 59.99	51166	33 54 39.11	51152	34 16 17.80	51137
380	34 37 56.05	51123	34 59 33.87	51108	35 21 11.26	51093	35 42 48.19	51079	36 4 24.69	51064
400	36 26 0.73	51048	36 47 36.32	51033	37 9 11.46	51018	37 30 46.13	51002	37 52 20.34	50987
420	38 13 54.08	50971	38 35 27.35	50955	38 57 0.15	50939	39 18 32.47	50923	39 40 4.31	50907
440	40 1 35.66	50890	40 23 6.53	50874	40 44 36.90	50857	41 6 6.78	50841	41 27 36.16	50824
460	41 49 5.04	50806	42 10 33.42	50790	42 32 1.29	50773	42 53 28.65	50755	43 14 55.49	50738
480	43 36 21.82	50720	43 57 47.63	50703	44 19 12.91	50685	44 40 37.67	50667	45 2 1.90	50649
500	45 23 25.60	50631	45 44 48.76	50613	46 6 11.39	50595	46 27 33.48	50577	46 48 55.02	50558
520	47 10 16.02	50539	47 31 36.47	50521	47 52 56.36	50502	48 14 15.70	50483	48 35 34.49	50464
540	48 56 52.72	50445	49 18 10.38	50426	49 39 27.48	50407	50 0 44.01	50387	50 21 59.97	50368
560	50 43 15.35	50348	51 4 30.16	50329	51 25 44.40	50309	51 46 58.05	50289	52 8 11.12	50269
580	52 29 23.61	50249	52 50 35.50	50229	53 11 46.81	50209	53 32 57.53	50189	53 54 7.65	50168
600	54 15 17.18	50148	54 36 26.10	50127	54 57 34.43	50107	55 18 42.15	50086	55 39 49.27	50065
620	56 0 55.77	50044	56 22 1.67	50023	56 43 6.96	50002	57 4 11.64	49981	57 25 15.70	49960
640	57 46 19.14	49939	58 7 21.97	49918	58 28 24.17	49896	58 49 25.75	49875	59 10 26.71	49853
660	59 31 27.04	49832	59 52 26.74	49810	60 13 25.81	49788	60 34 24.25	49766	60 55 22.06	49744
680	61 16 19.23	49722	61 37 15.76	49700	61 58 11.66	49678	62 19 6.92	49656	62 40 1.53	49634
700	63 0 55.50	49612	63 21 48.83	49589	63 42 41.52	49567	64 3 33.55	49544	64 24 24.94	49522
720	64 45 15.67	49499	65 6 5.76	49477	65 26 55.19	49454	65 47 43.97	49431	66 8 32.09	49408
740	66 29 19.56	49386	66 50 6.37	49363	67 10 52.52	49340	67 31 38.01	49317	67 52 22.84	49294
760	68 13 7.01	49270	68 33 50.52	49247	68 54 33.36	49224	69 15 15.54	49201	69 35 57.05	49177
780	69 56 37.90	49154	70 17 18.07	49131	70 37 57.58	49107	70 58 36.42	49084	71 19 14.59	49060
800	71 39 52.09	49037	72 0 28.92	49013	72 21 5.07	48989	72 41 40.55	48966	73 2 15.36	48942
820	73 22 49.49	48918	73 43 22.95	48895	74 3 55.73	48871	74 24 27.84	48847	74 44 59.27	48823
840	75 5 30.02	48799	75 26 0.10	48775	75 46 29.49	48751	76 6 58.21	48727	76 27 26.25	48703
860	76 47 53.61	48679	77 8 20.29	48655	77 28 46.28	48631	77 49 11.60	48607	78 9 36.24	48583
880	78 30 0.20	48558	78 50 23.47	48534	79 10 46.07	48510	79 31 7.98	48486	79 51 29.21	48462
900	80 11 49.76	48437	80 32 9.63	48413	80 52 28.81	48389	81 12 47.31	48365	81 33 5.13	48340
920	81 53 22.27	48316	82 13 38.73	48291	82 33 54.50	48267	82 54 9.59	48243	83 14 24.00	48218
940	83 34 37.73	48194	83 54 50.78	48170	84 15 3.14	48145	84 35 14.83	48121	84 55 25.83	48096
960	85 15 36.16	48072	85 35 45.80	48047	85 55 54.77	48023	86 16 3.05	47999	86 36 10.65	47974
980	86 56 17.58	47950	87 16 23.83	47925	87 36 29.40	47901	87 56 34.29	47877	88 16 38.50	47852
1000	88 36 42.04	47828	88 56 44.90	47803	89 16 47.08	47779	89 36 48.59	47754	89 56 49.43	47730
1020	90 16 49.59	47706	90 36 49.08	47681	90 56 47.89	47657	91 16 46.03	47633	91 36 43.50	47608
1040	91 56 40.30	47584	92 16 36.43	47560	92 36 31.89	47535	92 56 26.68	47511	93 16 20.80	47487
1060	93 36 14.26	47462	93 56 7.05	47438	94 15 59.17	47414	94 35 50.63	47390	94 55 41.43	47366
1080	95 15 31.56	47341	95 35 21.04	47317	95 55 9.85	47293	96 14 58.00	47269	96 34 45.50	47245

In the logarithm of the daily motion the characteristic 2 must be supplied.

Heliocentric longitude—Continued.

TABLE XXXVII.—True anomaly + Reduction to the Ecliptic—Continued.

[The Argument of this Table is the Fundamental Argument.]

Arg.	d. o	Log. D. M.	d. 4	Log. D. M.	d. 8	Log. D. M.	d. 12	Log. D. M.	d. 16	Log. D. M.
d.	° / "		° / "		° / "		° / "		° / "	
1100	96 54 32.33	47221	97 14 18.51	47197	97 34 4.04	47173	97 53 48.91	47149	98 13 33.13	47125
1120	98 33 16.09	47101	98 52 59.61	47077	99 12 41.87	47053	99 32 23.48	47030	99 52 4.45	47006
1140	100 11 44.77	46982	100 31 24.44	46958	100 51 3.48	46935	101 10 41.86	46911	101 30 19.61	46887
1160	101 49 56.71	46864	102 9 33.18	46840	102 29 9.01	46817	102 48 44.20	46793	103 8 18.76	46770
1180	103 27 52.69	46746	103 47 25.98	46723	104 6 58.64	46700	104 26 30.67	46676	104 46 2.08	46653
1200	105 5 32.86	46630	105 25 3.01	46607	105 44 32.54	46584	106 4 1.45	46561	106 23 29.74	46537
1220	106 42 57.41	46514	107 2 24.46	46491	107 21 50.90	46468	107 41 16.72	46446	108 0 41.93	46423
1240	108 20 6.53	46400	108 39 30.53	46378	108 58 53.91	46355	109 18 16.69	46332	109 37 38.86	46310
1260	109 57 0.43	46287	110 16 21.40	46265	110 35 41.77	46242	110 55 1.55	46220	111 14 20.72	46198
1280	111 33 39.31	46176	111 52 57.30	46153	112 12 14.71	46131	112 31 31.52	46109	112 50 47.75	46087
1300	113 10 3.39	46065	113 29 18.46	46044	113 48 32.94	46022	114 7 46.84	46000	114 27 0.16	45978
1320	114 46 12.91	45957	115 5 25.09	45935	115 24 36.70	45914	115 43 47.73	45892	116 2 58.20	45871
1340	116 22 8.10	45849	116 41 17.45	45828	117 0 26.22	45807	117 19 34.44	45786	117 38 42.11	45765
1360	117 57 49.21	45744	118 16 55.77	45723	118 36 1.77	45702	118 55 7.22	45681	119 14 12.13	45661
1380	119 33 16.49	45640	119 52 20.31	45619	120 11 23.59	45599	120 30 26.33	45578	120 49 28.53	45558
1400	121 8 30.20	45538	121 27 31.34	45518	121 46 31.95	45497	122 5 32.02	45477	122 24 31.58	45457
1420	122 43 30.61	45437	123 2 29.12	45416	123 21 27.11	45397	123 40 24.59	45378	123 59 21.55	45359
1440	124 18 18.00	45339	124 37 13.93	45320	124 56 9.37	45300	125 15 4.29	45281	125 33 58.72	45262
1460	125 52 52.64	45243	126 11 46.06	45224	126 30 38.99	45205	126 49 31.43	45186	127 8 23.37	45167
1480	127 27 14.83	45148	127 46 5.80	45130	128 4 56.29	45111	128 23 46.29	45093	128 42 35.82	45074
1500	129 1 24.86	45056	129 20 13.44	45038	129 39 1.54	45020	129 57 49.17	45002	130 16 36.33	44984
1520	130 35 23.03	44966	130 54 9.27	44948	131 12 55.05	44930	131 31 40.37	44913	131 50 25.23	44895
1540	132 9 9.64	44878	132 27 53.61	44860	132 46 37.12	44843	133 5 20.20	44826	133 24 2.83	44809
1560	133 42 45.02	44792	134 1 26.77	44775	134 20 8.09	44758	134 38 48.97	44742	134 57 29.43	44725
1580	135 16 9.46	44709	135 34 49.06	44692	135 53 28.25	44676	136 12 7.01	44660	136 30 45.36	44644
1600	136 49 23.29	44627	137 8 0.81	44612	137 26 37.93	44596	137 45 14.63	44580	138 3 50.94	44564
1620	138 22 26.84	44549	138 41 2.35	44533	138 59 37.46	44518	139 18 12.17	44503	139 36 46.50	44488
1640	139 55 20.44	44473	140 13 54.00	44458	140 32 27.17	44443	140 50 59.96	44428	141 9 32.38	44413
1660	141 28 4.42	44399	141 46 36.09	44384	142 5 7.40	44370	142 23 38.33	44356	142 42 8.90	44341
1680	143 0 39.12	44327	143 19 8.97	44313	143 37 38.47	44300	143 56 7.62	44286	144 14 36.41	44272
1700	144 33 4.86	44259	144 51 32.97	44245	145 10 0.73	44232	145 28 28.16	44219	145 46 55.25	44206
1720	146 5 22.00	44193	146 23 48.43	44180	146 42 14.53	44167	147 0 40.30	44154	147 19 5.76	44142
1740	147 37 30.89	44129	147 55 55.71	44117	148 14 20.22	44105	148 32 44.41	44092	148 51 8.30	44080
1760	149 9 31.88	44068	149 27 55.16	44057	149 46 18.14	44045	150 4 40.83	44033	150 23 3.22	44022
1780	150 41 25.32	44010	150 59 47.13	43999	151 18 8.66	43988	151 36 29.91	43977	151 54 50.88	43966
1800	152 13 11.57	43955	152 31 31.98	43944	152 49 52.13	43933	153 8 12.01	43923	153 26 31.62	43913
1820	153 44 50.98	43902	154 3 10.07	43892	154 21 28.90	43882	154 39 47.49	43872	154 58 5.82	43862
1840	155 16 23.91	43853	155 34 41.75	43843	155 52 59.35	43834	156 11 16.71	43824	156 29 33.83	43815
1860	156 47 50.72	43806	157 6 7.38	43797	157 24 23.82	43788	157 42 40.03	43779	158 0 56.02	43770
1880	158 19 11.79	43762	158 37 27.35	43753	158 55 42.69	43745	159 13 57.83	43736	159 32 12.76	43728
1900	159 50 27.48	43720	160 8 42.01	43712	160 26 56.33	43705	160 45 10.46	43697	161 3 24.40	43689
1920	161 21 38.16	43682	161 39 51.72	43675	161 58 5.11	43668	162 16 18.31	43660	162 34 31.33	43653
1940	162 52 44.19	43647	163 10 56.87	43640	163 29 9.38	43633	163 47 21.73	43627	164 5 33.92	43620
1960	164 23 45.94	43614	164 41 57.81	43608	165 0 9.53	43602	165 18 21.10	43596	165 36 32.52	43590
1980	165 54 43.80	43584	166 12 54.94	43579	166 31 5.93	43574	166 49 16.80	43568	167 7 27.53	43563
2000	167 25 38.13	43558	167 43 48.61	43553	168 1 58.96	43548	168 20 9.19	43543	168 38 19.31	43539
2020	168 56 29.31	43534	169 14 39.20	43530	169 32 48.98	43526	169 50 58.66	43522	170 9 8.23	43518
2040	170 27 17.71	43514	170 45 27.09	43510	171 3 36.38	43506	171 21 45.58	43503	171 39 54.69	43499
2060	171 58 3.71	43496	172 16 12.66	43493	172 34 21.53	43490	172 52 30.32	43487	173 10 39.04	43484
2080	173 28 47.70	43481	173 46 56.28	43479	174 5 4.81	43476	174 23 13.27	43474	174 41 21.68	43472
2100	174 59 30.04	43470	175 17 38.34	43468	175 35 46.60	43466	175 53 54.81	43464	176 12 2.98	43463
2120	176 30 11.11	43461	176 48 19.21	43460	177 6 27.27	43459	177 24 35.31	43458	177 42 43.31	43457
2140	178 0 51.30	43456	178 18 59.26	43455	178 37 7.21	43454	178 55 15.14	43454	179 13 23.06	43453
2160	179 31 30.98	43453	179 49 38.89	43453	180 7 46.79	43453	180 25 54.70	43453	180 44 2.62	43453
2180	181 2 10.53	43454	181 20 18.46	43454	181 38 26.41	43455	181 56 34.36	43456	182 14 42.34	43456

In the logarithm of the daily motion the characteristic 2 must be supplied.

Heliocentric longitude—Continued.

TABLE XXXVII.—True anomaly + Reduction to the Ecliptic—Continued.

[The Argument of this Table is the Fundamental Argument.]

Arg.	d. o	Log. D. M.	d. 4	Log. D. M.	d. 8	Log. D. M.	d. 12	Log. D. M.	d. 16	Log. D. M.
d.	° / "		° / "		° / "		° / "		° / "	
2200	182 32 50.34	43457	182 50 58.37	43458	183 9 6.42	43460	183 27 14.51	43461	183 45 22.63	43462
2220	184 3 30.78	43464	184 21 38.98	43466	184 39 47.22	43467	184 57 55.51	43469	185 16 3.84	43471
2240	185 34 12.23	43473	185 52 20.68	43475	186 10 29.18	43477	186 28 37.74	43480	186 46 46.37	43483
2260	187 4 55.07	43486	187 23 3.84	43489	187 41 12.68	43492	187 59 21.60	43495	188 17 30.60	43498
2280	188 35 39.68	43502	188 53 48.85	43505	189 11 58.10	43509	189 30 7.45	43512	189 48 16.89	43516
2300	190 6 26.43	43520	190 24 36.07	43524	190 42 45.82	43529	191 0 55.67	43533	191 19 5.03	43537
2320	191 37 15.71	43542	191 55 25.90	43547	192 13 36.21	43551	192 31 46.65	43556	192 49 57.20	43561
2340	193 8 7.89	43566	193 26 18.71	43572	193 44 29.66	43577	194 2 40.74	43583	194 20 51.97	43588
2360	194 39 3.34	43594	194 57 14.86	43600	195 15 26.53	43606	195 33 38.35	43612	195 51 50.32	43618
2380	196 10 2.45	43625	196 28 14.74	43631	196 46 27.20	43638	197 4 39.82	43644	197 22 52.62	43651
2400	197 41 5.58	43658	197 59 18.73	43665	198 17 32.05	43672	198 35 45.55	43679	198 53 59.24	43687
2420	199 12 13.11	43694	199 30 27.18	43702	199 48 41.44	43710	200 6 55.90	43718	200 25 10.55	43726
2440	200 43 25.41	43734	201 1 40.48	43742	201 19 55.75	43750	201 38 11.23	43759	201 56 26.93	43767
2460	202 14 42.85	43776	202 32 58.98	43785	202 51 15.34	43794	203 9 31.93	43803	203 27 48.74	43812
2480	203 46 5.79	43821	204 4 23.07	43830	204 22 40.59	43840	204 40 58.35	43849	204 59 16.36	43859
2500	205 17 34.61	43869	205 35 53.11	43879	205 54 11.86	43889	206 12 30.87	43899	206 30 50.14	43909
2520	206 49 9.67	43920	207 7 29.46	43930	207 25 49.52	43941	207 44 9.85	43951	208 2 30.45	43962
2540	208 20 51.32	43973	208 39 12.48	43984	208 57 33.91	43995	209 15 55.63	44007	209 34 17.64	44018
2560	209 52 39.94	44030	210 11 2.53	44041	210 29 25.41	44053	210 47 48.59	44065	211 6 12.08	44077
2580	211 24 35.87	44089	211 42 59.96	44101	212 1 24.37	44113	212 19 49.09	44125	212 38 14.12	44138
2600	212 56 39.47	44150	213 15 5.15	44163	213 33 31.15	44176	213 51 57.47	44189	214 10 24.12	44202
2620	214 28 51.11	44215	214 47 18.43	44228	215 5 46.09	44241	215 24 14.09	44255	215 42 42.43	44268
2640	216 1 11.12	44282	216 19 40.16	44295	216 38 9.55	44309	216 56 39.29	44323	217 15 9.39	44337
2660	217 33 39.85	44351	217 52 10.68	44365	218 10 41.86	44380	218 29 13.42	44394	218 47 45.35	44409
2680	219 6 17.65	44423	219 24 50.33	44438	219 43 23.38	44453	220 1 56.82	44468	220 20 30.65	44483
2700	220 39 4.85	44498	220 57 39.45	44513	221 16 14.45	44529	221 34 49.83	44544	221 53 25.62	44560
2720	222 12 1.80	44575	222 30 38.39	44591	222 49 15.38	44607	223 7 52.78	44623	223 26 30.60	44639
2740	223 45 8.82	44655	224 3 47.46	44671	224 22 26.52	44687	224 41 6.01	44704	224 59 45.91	44720
2760	225 18 26.25	44737	225 37 7.01	44754	225 55 48.20	44770	226 14 29.83	44787	226 33 11.89	44804
2780	226 51 54.40	44821	227 10 37.34	44838	227 29 20.74	44856	227 48 4 57	44873	228 6 48.86	44890
2800	228 25 33.60	44908	228 44 18.79	44925	229 3 4.44	44943	229 21 50.55	44961	229 40 37.12	44979
2820	229 59 24.16	44997	230 18 11.66	45015	230 36 59.63	45033	230 55 48.08	45051	231 14 36.99	45069
2840	231 33 26.39	45088	231 52 16.26	45106	232 11 6.61	45125	232 29 57.45	45143	232 48 48.78	45162
2860	233 7 40.59	45181	233 26 32.90	45200	233 45 25.69	45219	234 4 18.99	45238	234 23 12.78	45257
2880	234 42 7.07	45276	235 1 1.87	45295	235 19 57.17	45315	235 38 52.97	45334	235 57 49.29	45354
2900	236 16 46.12	45373	236 35 43.47	45393	236 54 41.33	45413	237 13 39.72	45433	237 32 38.61	45452
2920	237 51 38.03	45472	238 10 37.97	45492	238 29 38.45	45513	238 48 39.45	45533	239 7 40.99	45553
2940	239 26 43.06	45573	239 45 45.66	45594	240 4 48.81	45614	240 23 52.49	45635	240 42 56.72	45656
2960	241 2 1.49	45676	241 21 6.81	45697	241 40 12.68	45718	241 59 19.10	45739	242 18 26.07	45760
2980	242 37 33.60	45781	242 56 41.68	45802	243 15 50.33	45823	243 34 59.54	45844	243 54 9.31	45866
3000	244 13 19.65	45887	244 32 30.55	45909	244 51 42.02	45930	245 10 54.07	45952	245 30 6.69	45973
3020	245 49 19.88	45995	246 8 33.65	46017	246 27 48.00	46039	246 47 2.93	46060	247 6 18.45	46082
3040	247 25 34.54	46104	247 44 51.23	46126	248 4 8.50	46149	248 23 26.36	46171	248 42 44.82	46193
3060	249 2 3.87	46215	249 21 23.51	46238	249 40 43.75	46260	250 0 4.60	46282	250 19 26.04	46305
3080	250 38 48.08	46328	250 58 10.73	46350	251 17 33.99	46373	251 36 57.85	46395	251 56 22.33	46418
3100	252 15 47.41	46441	252 35 13.11	46464	252 54 39.42	46487	253 14 6.34	46510	253 33 33.89	46533
3120	253 53 2.05	46556	254 12 30.84	46579	254 32 0.24	46602	254 51 30.27	46625	255 11 0.93	46648
3140	255 30 32.21	46672	255 50 4.12	46695	256 9 36.66	46718	256 29 9.83	46742	256 48 43.63	46765
3160	257 8 18.07	46789	257 27 53.14	46812	257 47 28.85	46836	258 7 5.20	46859	258 26 42.18	46883
3180	258 46 19.81	46907	259 5 58.08	46930	259 25 36.99	46954	259 45 16.55	46978	260 4 56.75	47002
3200	260 24 37.60	47025	260 44 19.10	47049	261 4 1.25	47073	261 23 44.04	47097	261 43 27.49	47121
3220	262 3 11.60	47145	262 22 56.35	47169	262 42 41.77	47193	263 2 27.83	47217	263 22 14.56	47241
3240	263 42 1.94	47265	264 1 49.99	47289	264 21 38.69	47313	264 41 28.05	47337	265 1 18.08	47362
3260	265 21 8.77	47386	265 41 0.13	47410	266 0 52.14	47434	266 20 44.83	47459	266 40 38.18	47483
3280	267 0 32.20	47507	267 20 26.88	47531	267 40 22.24	47556	268 0 18.27	47580	268 20 14.96	47604

In the logarithm of the daily motion the characteristic 2 must be supplied.

Heliocentric longitude—Continued.

TABLE XXXVII.—True anomaly + Reduction to the Ecliptic—Continued.

[The Argument of this Table is the Fundamental Argument.]

Arg.	d. o	Log. D. M.	d. 4	Log. D. M.	d. 8	Log. D. M.	d. 12	Log. D. M.	d. 16	Log. D. M.
d.	° / "		° / "		° / "		° / "		° / "	
3300	268 40 12.33	47629	269 0 10.37	47653	269 20 9.08	47678	269 40 8.47	47702	270 0 8.53	47727
3320	270 20 9.27	47751	270 40 10.68	47775	271 0 12.76	47800	271 20 15.53	47824	271 40 18.97	47849
3340	272 0 23.08	47873	272 20 27.88	47897	272 40 33.35	47922	273 0 39.48	47946	273 20 46.34	47971
3360	273 40 53.85	47995	274 1 2.05	48020	274 21 10.92	48044	274 41 20.47	48069	275 1 30.71	48093
3380	275 21 41.63	48118	275 41 53.22	48142	276 2 5.50	48167	276 22 18.47	48191	276 42 32.11	48215
3400	277 2 46.44	48240	277 23 1.45	48264	277 43 17.14	48288	278 3 33.51	48313	278 23 50.56	48337
3420	278 44 8.31	48362	279 4 26.73	48386	279 24 45.84	48410	279 45 5.62	48435	280 5 26.03	48459
3440	280 25 47.25	48483	280 46 9.08	48507	281 6 31.60	48532	281 26 54.80	48556	281 47 18.68	48580
3460	282 7 43.25	48604	282 28 8.49	48628	282 48 34.42	48652	283 9 1.03	48677	283 29 28.31	48701
3480	283 49 56.28	48725	284 10 24.93	48749	284 30 54.26	48773	284 51 24.27	48797	285 11 54.95	48821
3500	285 32 26.32	48845	285 52 58.36	48868	286 13 31.08	48892	286 34 4.47	48916	286 54 38.55	48940
3520	287 15 13.29	48964	287 35 48.71	48987	287 56 24.81	49011	288 17 1.58	49035	288 37 38.98	49058
3540	288 58 17.13	49082	289 18 55.91	49105	289 39 35.36	49129	290 0 15.49	49152	290 20 56.28	49176
3560	290 41 37.74	49199	291 2 19.86	49222	291 23 2.65	49245	291 43 46.11	49269	292 4 30.23	49292
3580	292 25 15.01	49315	292 46 0.45	49338	293 6 46.56	49361	293 27 33.32	49384	293 48 20.74	49407
3600	294 9 8.82	49430	294 29 57.55	49452	294 50 46.94	49475	295 11 36.98	49498	295 32 27.67	49520
3620	295 53 19.02	49543	296 14 11.01	49565	296 35 3.65	49588	296 55 56.94	49610	297 16 50.87	49633
3640	297 37 45.45	49655	297 58 40.66	49677	298 19 36.52	49699	298 40 33.02	49721	299 1 30.16	49743
3660	299 22 27.93	49765	299 43 26.33	49787	300 4 25.37	49809	300 25 25.04	49830	300 46 25.33	49852
3680	301 7 26.26	49873	301 28 27.80	49895	301 49 29.98	49917	302 10 32.77	49938	302 31 36.18	49959
3700	302 52 40.22	49980	303 13 44.86	50001	303 34 50.13	50023	303 55 56.00	50044	304 17 2.49	50064
3720	304 38 9.58	50085	304 59 17.28	50106	305 20 25.58	50127	305 41 34.48	50147	306 2 43.99	50168
3740	306 23 54.09	50188	306 45 4.78	50208	307 6 16.07	50229	307 27 27.95	50249	307 48 40.41	50269
3760	308 9 53.47	50289	308 31 7.10	50308	308 52 21.32	50328	309 13 36.11	50348	309 34 51.48	50367
3780	309 56 7.42	50387	310 17 23.94	50406	310 38 41.02	50426	310 59 58.66	50445	311 21 16.87	50464
3800	311 42 35.64	50483	312 3 54.97	50502	312 25 14.86	50520	312 46 35.29	50539	313 7 56.28	50558
3820	313 29 17.81	50576	313 50 39.88	50595	314 12 2.50	50613	314 33 25.66	50631	314 54 49.35	50649
3840	315 16 13.57	50667	315 37 38.32	50685	315 59 3.60	50703	316 20 29.40	50720	316 41 55.73	50738
3860	317 3 22.57	50755	317 24 49.92	50772	317 46 17.79	50790	318 7 46.16	50807	318 29 15.03	50824
3880	318 50 44.41	50841	319 12 14.29	50857	319 33 44.66	50874	319 55 15.52	50890	320 16 46.88	50907
3900	320 38 18.71	50923	320 59 51.03	50939	321 21 23.82	50955	321 42 57.10	50971	322 4 30.84	50987
3920	322 26 5.05	51002	322 47 39.72	51018	323 9 14.86	51033	323 30 50.45	51048	323 52 26.49	51064
3940	324 14 2.99	51079	324 35 39.93	51093	324 57 17.31	51108	325 18 55.13	51123	325 40 33.39	51137
3960	326 2 12.08	51152	326 23 51.19	51166	326 45 30.73	51180	327 7 10.60	51194	327 28 51.07	51208
3980	327 50 31.86	51222	328 12 13.06	51235	328 33 54.66	51249	328 55 36.67	51262	329 17 19.07	51275
4000	329 39 1.86	51288	330 0 45.04	51301	330 22 28.60	51314	330 44 12.55	51326	331 5 56.87	51339
4020	331 27 41.57	51351	331 49 26.63	51363	332 11 12.06	51375	332 32 57.85	51387	332 54 44.00	51399
4040	333 16 30.49	51411	333 38 17.33	51422	334 0 4.52	51433	334 21 52.05	51445	334 43 39.91	51459
4060	335 5 28.10	51467	335 27 16.61	51477	335 49 5.45	51488	336 10 54.61	51498	336 32 44.08	51509
4080	336 54 33.85	51519	337 16 23.94	51529	337 38 14.32	51539	338 0 4.99	51548	338 21 55.96	51558
4100	338 43 47.21	51567	339 5 38.75	51577	339 27 30.56	51586	339 49 22.65	51595	340 11 15.00	51604
4120	340 33 7.62	51612	340 55 0.50	51621	341 16 53.63	51629	341 38 47.01	51637	342 0 40.64	51645
4140	342 22 34.51	51653	342 44 28.61	51661	343 6 22.94	51668	343 28 17.50	51676	343 50 12.28	51683
4160	344 12 7.28	51690	344 34 2.49	51697	344 55 57.91	51704	345 17 53.53	51710	345 39 49.35	51717
4180	346 1 45.37	51723	346 23 41.57	51729	346 45 37.96	51735	347 7 34.52	51741	347 29 31.26	51747
4200	347 51 28.16	51752	348 13 25.24	51758	348 35 22.47	51763	348 57 19.85	51768	349 19 17.39	51773
4220	349 41 15.07	51777	350 3 12.89	51782	350 25 10.84	51786	350 47 8.93	51790	351 9 7.14	51795
4240	351 31 5.47	51799	351 53 3.92	51802	352 15 2.47	51806	352 37 1.13	51809	352 58 59.89	51812
4260	353 20 58.75	51815	353 42 57.70	51818	354 4 56.73	51821	354 26 55.85	51824	354 48 55.04	51826
4280	355 10 54.30	51828	355 32 53.62	51830	355 54 53.01	51832	356 16 52.45	51834	356 38 51.94	51835
4300	357 0 51.48	51837	357 22 51.06	51838	357 44 50.67	51839	358 6 50.32	51840	358 28 49.98	51841
4320	358 50 49.67	51842	359 12 49.38	51842	359 34 49.09	51842	359 56 48.82	51842	0 18 48.54	51842
4340	0 40 48.25	51842	1 2 47.96	51842	1 24 47.65	51841	1 46 47.32	51840	2 8 46.97	51839

In the logarithm of the daily motion the characteristic 2 must be supplied.

Inequalities of the Common Logarithm of the Radius multiplied by 3.

TABLE XXXVIII.

Arg. I.	Equation.
d.	
0	300 + 5
80	305 + 2
160	307 + 3
240	304 - 6
320	298 10
400	288 12
480	276 15
560	261 18
640	243 19
720	224 20
800	204 20
880	184 19
960	165 19
1040	146 19
1120	129 17
1200	114 15
1280	101 13
1360	91 10
1440	84 7
1520	80 4
1600	78 + 2
1680	79 + 1
1760	83 4
1840	88 5
1920	96 8
2000	105 9
2080	115 10
2100	127 12
2240	139 12
2320	152 13
2400	164 12
2480	177 13
2560	190 13
2640	202 12
2720	214 12
2800	224 10
2880	234 8
2960	242 6
3040	248 5
3120	253 + 2
3200	255 + 0
3280	255 - 2
3360	253 - 6
3440	247 8
3520	239 10
3600	229 14
3680	215 16
3760	199 19
3840	180 21
3920	159 23
4000	136 24
4080	112 25
4160	87 26
4240	61 27
4320	34 - 26
4400	8 - 26

TABLE XXXIX.

Year.	Equa.	Year.	Equa.	Arg. II.	Equation.	Arg. II.	Equation.	Arg. II.	Equation.
—240	1	860	7	d.		d.		d.	
220	1	880	8	17280	73 - 3	76680	503 + 18	136080	1219 + 6
200	2	900	9	18360	70 - 3	77760	521 + 17	137160	1225 + 6
180	2	920	10	19440	67 - 1	78840	538 18	138240	1231 6
160	3	940	11	20520	66 + 1	79920	556 17	139320	1237 7
140	4	960	11	21600	67 + 1	81000	573 17	140400	1244 8
120	5	980	12	22680	68 1	82080	590 15	141480	1252 9
100	6	1000	13	23760	71 3	83160	605 14	142560	1261 11
80	7	1020	13	24840	77 6	84240	619 12	143640	1272 11
60	7	1040	14	25920	84 7	85320	631 12	144720	1283 11
40	8	1060	14	27000	91 8	86400	643 10	145800	1294 12
—20	9	1080	14	28080	99 9	87480	653 10	146880	1306 12
0	10	1100	14	29160	108 10	88560	662 9	147960	1318 12
20	11	1120	14	30240	118 8	89640	670 8	149040	1330 11
40	12	1140	14	31320	126 8	90720	678 8	150120	1341 11
60	13	1160	14	32400	134 8	91800	686 10	151200	1352 9
80	13	1180	14	33480	142 7	92880	696 10	152280	1361 8
100	14	1200	13	34560	149 5	93960	706 12	153360	1369 8
120	14	1220	13	35640	154 5	95040	718 13	154440	1377 6
140	14	1240	12	36720	159 4	96120	731 15	155520	1383 4
160	15	1260	11	37800	163 4	97200	746 17	156600	1387 4
180	15	1280	10	38880	167 3	98280	763 18	157680	1391 3
200	15	1300	9	39960	170 3	99360	781 19	158760	1394 2
220	14	1320	8	41040	173 3	100440	800 19	159840	1396 1
240	14	1340	8	42120	177 4	101520	819 20	160920	1397 1
260	13	1360	7	43200	181 4	102600	839 19	162000	1398 2
280	13	1380	6	44280	185 4	103680	858 18	163080	1400 1
300	12	1400	5	45360	191 6	104760	876 16	164160	1401 2
320	11	1420	4	46440	198 8	105840	892 15	165240	1403 2
340	11	1440	3	47520	206 8	106920	907 13	166320	1405 4
360	10	1460	3	48600	214 11	108000	920 12	167400	1409 4
380	9	1480	2	49680	225 11	109080	932 9	168480	1413 4
400	8	1500	1	50760	236 12	110160	941 9	169560	1417 6
420	7	1520	1	51840	248 12	111240	950 9	170640	1423 6
440	6	1540	1	52920	260 13	112320	958 7	171720	1429 4
460	5	1560	1	54000	273 14	113400	965 8	172800	1433 6
480	4	Arg. II.		55080	287 13	114480	973 8	173880	1439 5
500	3	d.		56160	300 12	115560	981 9	174960	1444 5
520	2	57 - 1		57240	312 12	116640	990 11	176040	1449 4
540	2	56 0		58320	325 12	117720	1001 12	177120	1453 2
560	1	56 + 3		59400	337 11	118800	1013 14	178200	1455 + 1
580	1	59 + 3		60480	348 9	119880	1027 15	179280	1456 + 0
600	0	63 4		61560	357 9	120960	1042 16	180360	1456 - 1
620	0	67 4		62640	366 9	122040	1058 17	181440	1455 - 4
640	0	72 5		63720	375 8	123120	1075 18	182520	1451 4
660	0	77 5		64800	383 7	124200	1093 18	183600	1447 4
680	1	81 4		65880	390 7	125280	1110 17	184680	1442 6
700	1	84 3		66960	397 7	126360	1127 16	185760	1436 6
720	1	85 1		68040	405 9	127440	1143 14	186840	1430 6
740	2	86 + 1		69120	414 9	128520	1157 13	187920	1424 5
760	3	86 - 1		70200	423 10	129600	1170 12	189000	1419 6
780	3	85 2		71280	433 11	130680	1182 10	190080	1413 4
800	4	83 3		72360	444 13	131760	1192 8	191160	1409 2
820	5	80 3		73440	457 14	132840	1200 7	192240	1407 1
840	6	77 - 4		74520	471 16	133920	1207 6	193320	1406 1
860	7	73 - 4		75600	487 + 16	135000	1213 + 6	194400	1405 - 1
				76680	503 + 16	136080	1219 + 6	195480	1404

The quantities tabulated are in units of the seventh decimal, except in Table XXXIX, when the argument is in years, they are in units of the fifth decimal.

Inequalities of the Common Logarithm of the Radius multiplied by 3—Continued.

TABLE XXXIX—Cont'd.

TABLE XL.

Arg. II.	Equation.	Arg. III.	Equation.	Arg. III.	Equation.	Arg. III.	Equation.	Arg. III.	Equation.
d.		d.		d.		d.		d.	
195480	1404 + 1	0	5792 - 420	1840	10721 + 457	3680	8363 - 496	5520	14424 + 344
196560	1405 + 2	40	5372	1880	11178 + 448	3720	7867 - 485	5560	14768 + 318
197640	1407 + 1	80	4967	1920	11626	3760	7382	5600	15086
198720	1406 - 1	120	4580	1960	12064	3800	6908	5640	15378
199800	1405	160	4212	2000	12491	3840	6451	5680	15641
200880	1404	200	3864	2040	12904	3880	6013	5720	15876
201960	1402	240	3538	2080	13303	3920	5597	5760	16080
203040	1396	280	3234	2120	13685	3960	5207	5800	16254
204120	1389	320	2954	2160	14048	4000	4847	5840	16397
205200	1381	360	2699	2200	14393	4040	4519	5880	16508
206280	1371	400	2470	2240	14716	4080	4226	5920	16587
207360	1359	440	2268	2280	15016	4120	3970	5960	16633
208440	1346	480	2094	2320	15293	4160	3755	6000	16647
209520	1334	520	1947	2360	15544	4200	3583	6040	16628
210600	1321	560	1829	2400	15760	4240	3454	6080	16577
211680	1309	600	1739	2440	15967	4280	3370	6120	16494
212760	1297	640	1679	2480	16137	4320	3331	6160	16380
213840	1287	680	1640	2520	16278	4360	3339	6200	16235
214920	1279	720	1648	2560	16389	4400	3393	6240	16059
216000	1272	760	1677	2600	16469	4440	3492	6280	15855
217080	1265	800	1735	2640	16519	4480	3635	6320	15621
218160	1261	840	1822	2680	16537	4520	3821	6360	15361
219240	1257	880	1937	2720	16523	4560	4048	6400	15074
		920	2081	2760	16478	4600	4313	6440	14762
		960	2253	2800	16402	4640	4615	6480	14428
Year.		1000	2451	2840	16293	4680	4949	6520	14071
2140	13	1040	2676	2880	16153	4720	5315	6560	13693
2160	12	1080	2926	2920	15982	4760	5708	6600	13297
2180	12	1120	3199	2960	15780	4800	6125	6640	12884
2200	11	1160	3497	3000	15549	4840	6563	6680	12455
2220	10	1200	3817	3040	15288	4880	7020	6720	12013
2240	9	1240	4157	3080	14999	4920	7492	6760	11560
2260	8	1280	4518	3120	14683	4960	7975	6800	11097
2280	7	1320	4896	3160	14341	5000	8467	6840	10626
2300	6	1360	5290	3200	13975	5040	8965	6880	10150
		1400	5700	3240	13586	5080	9466	6920	9670
		1440	6124	3280	13175	5120	9967	6960	9188
		1480	6559	3320	12745	5160	10465	7000	8707
		1520	7004	3360	12297	5200	10958	7040	8228
		1560	7458	3400	11833	5240	11442	7080	7753
		1600	7919	3440	11357	5280	11917	7120	7285
		1640	8384	3480	10869	5320	12379	7160	6825
		1680	8853	3520	10374	5360	12825	7200	6375
		1720	9323	3560	9872	5400	13255	7240	5936
		1760	9792	3600	9368	5440	13666	7280	5511
		1800	10259	3640	8864	5480	14056		-425
		1840	10721	3680	8363	5520	14424		

The quantities tabulated are in units of the seventh decimal.

Inequalities of the Common Logarithm of the Radius multiplied by 3—Continued.

TABLE XLI.

Arg. IV.	Equation.	Arg. IV.	Equation.
d.		d.	
0	6324 + 277	2240	3551 - 272
40	6601 273	2280	3279 266
80	6874 267	2320	3013 259
120	7141 260	2360	2754 251
160	7401 253	2400	2503 243
200	7654 244	2440	2260 233
240	7898 236	2480	2027 223
280	8134 225	2520	1804 212
320	8359 215	2560	1592 201
360	8574 203	2600	1391 189
400	8777 192	2640	1202 175
440	8969 179	2680	1027 163
480	9148 165	2720	864 148
520	9313 152	2760	716 135
560	9465 137	2800	581 119
600	9602 123	2840	462 104
640	9725 107	2880	358 89
680	9832 92	2920	269 73
720	9924 76	2960	196 56
760	10000 60	3000	140 41
800	10060 44	3040	99 24
840	10104 27	3080	75 8
880	10131 + 11	3120	67 + 9
920	10142 6	3160	76 + 25
960	10136 22	3200	101 41
1000	10114 39	3240	142 58
1040	10075 55	3280	200 74
1080	10020 72	3320	274 89
1120	9948 87	3360	363 105
1160	9861 103	3400	468 120
1200	9758 119	3440	588 135
1240	9639 133	3480	723 149
1280	9506 148	3520	872 163
1320	9358 161	3560	1035 176
1360	9197 176	3600	1211 188
1400	9021 188	3640	1399 201
1440	8833 200	3680	1600 213
1480	8633 212	3720	1813 223
1520	8421 223	3760	2036 233
1560	8198 233	3800	2269 243
1600	7965 243	3840	2512 251
1640	7722 251	3880	2763 258
1680	7471 259	3920	3021 266
1720	7212 266	3960	3287 271
1760	6946 271	4000	3558 277
1800	6675 277	4040	3835 280
1840	6398 281	4080	4115 284
1880	6117 285	4120	4399 288
1920	5832 288	4160	4685 288
1960	5545 288	4200	4973 288
2000	5257 289	4240	5261 288
2040	4968 288	4280	5549 286
2080	4680 287	4320	5835 284
2120	4393 284	4360	6119 280
2160	4109 281	4400	6399 277
2200	3828 277	4440	6676 + 271
2240	3551 - 277	4480	6947 + 271

TABLE XLII.

Arg. V.	Equation.	Arg. V.	Equation.	Arg. V.	Equation.
d.		d.		d.	
0	2034 + 16	5640	2674 - 35	11280	474 - 42
120	2050 + 14	5760	2639 37	11400	432 - 37
240	2064 10	5880	2602 38	11520	395 31
360	2074 8	6000	2564 39	11640	364 26
480	2082 6	6120	2525 38	11760	338 20
600	2088 5	6240	2487 37	11880	318 15
720	2093 3	6360	2450 37	12000	303 11
840	2096 3	6480	2413 35	12120	292 6
960	2099 2	6600	2378 34	12240	286 3
1080	2101 3	6720	2344 32	12360	283 + 1
1200	2104 3	6840	2312 30	12480	284 + 3
1320	2107 5	6960	2282 28	12600	287 5
1440	2112 7	7080	2254 27	12720	292 6
1560	2119 10	7200	2227 26	12840	298 8
1680	2129 12	7320	2201 24	12960	306 8
1800	2141 15	7440	2177 24	13080	314 8
1920	2156 19	7560	2153 23	13200	322 8
2040	2175 22	7680	2130 24	13320	330 7
2160	2197 25	7800	2106 24	13440	337 5
2280	2222 29	7920	2082 26	13560	342 5
2400	2251 32	8040	2056 28	13680	347 4
2520	2283 35	8160	2028 30	13800	351 2
2640	2318 38	8280	1998 32	13920	353 1
2760	2356 40	8400	1966 36	14040	354 + 1
2880	2396 41	8520	1930 39	14160	355 0
3000	2437 42	8640	1891 44	14280	355 - 1
3120	2479 43	8760	1847 47	14400	354 1
3240	2522 43	8880	1800 51	14520	353 0
3360	2565 41	9000	1749 56	14640	353 0
3480	2606 40	9120	1693 60	14760	353 + 2
3600	2646 38	9240	1633 63	14880	355 3
3720	2684 34	9360	1570 67	15000	358 5
3840	2718 31	9480	1503 70	15120	363 8
3960	2749 27	9600	1433 73	15240	371 10
4080	2776 23	9720	1360 75	15360	381 13
4200	2799 17	9840	1285 76	15480	394 16
4320	2816 12	9960	1209 77	15600	410 19
4440	2828 7	10080	1132 77	15720	429 23
4560	2835 + 1	10200	1055 76	15840	452 26
4680	2836 - 4	10320	979 75	15960	478 29
4800	2832 9	10440	904 73	16080	507 32
4920	2823 15	10560	831 70	16200	539 37
5040	2808 19	10680	761 66	16320	574 39
5160	2789 23	10800	695 63	16440	611 40
5280	2766 28	10920	632 57	16560	650 42
5400	2738 30	11040	575 53	16680	690 42
5520	2708 - 34	11160	522 - 48	16800	732 + 43
5640	2674	11280	474	16920	775 + 43

The quantities tabulated are in units of the seventh decimal.

Inequalities of the Common Logarithm of the Radius multiplied by 3—Continued.

TABLE XLII—Cont'd.

Arg. V.	Equation.
d.	
16920	775 +42
17040	817 42
17160	859 41
17280	900 40
17400	940 39
17520	979 36
17640	1015 35
17760	1050 32
17880	1082 30
18000	1112 27
18120	1139 25
18240	1164 23
18360	1187 20
18480	1207 19
18600	1226 17
18720	1243 17
18840	1260 15
18960	1275 15
19080	1290 16
19200	1306 16
19320	1322 16
19440	1338 18
19560	1356 20
19680	1376 22
19800	1398 23
19920	1421 26
20040	1447 28
20160	1475 30
20280	1505 32
20400	1537 33
20520	1570 36
20640	1606 38
20760	1642 38
20880	1680 38
21000	1718 38
21120	1756 37
21240	1793 37
21360	1830 35
21480	1865 33
21600	1898 31
21720	1929 29
21840	1958 26
21960	1984 24
22080	2008 20
22200	2028 17
22320	2045 14
22440	2059 12
22560	2071 +12

TABLE XLIII.

Arg. VI.	Equation.	Arg. VI.	Equation.
d.		d.	
0	4180 -115	2800	681 +149
80	4065 129	2880	830 163
160	3936 142	2960	993 173
240	3794 153	3040	1166 184
320	3641 164	3120	1350 191
400	3477 173	3200	1541 197
480	3304 181	3280	1738 202
560	3123 189	3360	1940 203
640	2934 194	3440	2143 204
720	2740 199	3520	2347 203
800	2541 202	3600	2550 200
880	2339 203	3680	2750 196
960	2136 202	3760	2946 190
1040	1934 201	3840	3136 182
1120	1733 196	3920	3318 174
1200	1537 190	4000	3492 165
1280	1347 183	4080	3657 153
1360	1164 174	4160	3810 142
1440	990 161	4240	3952 128
1520	829 149	4320	4080 115
1600	680 135	4400	4195 100
1680	545 117	4480	4295 85
1760	428 101	4560	4380 69
1840	327 82	4640	4449 52
1920	245 62	4720	4501 36
2000	183 41	4800	4537 19
2080	142 21	4880	4556 +2
2160	121 0	4960	4558 -16
2240	121 +21	5040	4542 32
2320	142 42	5120	4510 49
2400	184 62	5200	4461 65
2480	246 82	5280	4396 81
2560	328 101	5360	4315 96
2640	429 118	5440	4219 111
2720	547 +134	5520	4108 -124
2800	681	5600	3984

TABLE XLIV.

Arg. VII.	Equation.	Arg. VII.	Equation.
d.		d.	
0	1172 -1	1600	14 +4
40	1171 4	1640	18 9
80	1167 7	1680	27 12
120	1160 11	1720	39 16
160	1149 15	1760	55 19
200	1134 18	1800	74 23
240	1116 21	1840	97 26
280	1095 24	1880	123 30
320	1071 27	1920	153 32
360	1044 31	1960	185 36
400	1013 32	2000	221 37
440	981 36	2040	258 40
480	945 37	2080	298 42
520	908 40	2120	340 44
560	868 41	2160	384 46
600	827 43	2200	428 47
640	784 45	2240	474 47
680	739 46	2280	521 47
720	694 46	2320	568 46
760	648 47	2360	614 46
800	601 47	2400	661 46
840	554 46	2440	707 46
880	508 45	2480	753 46
920	462 45	2520	797 44
960	417 45	2560	839 42
1000	372 42	2600	881 42
1040	330 42	2640	920 39
1080	288 39	2680	957 37
1120	249 37	2720	991 34
1160	212 34	2760	1023 32
1200	178 32	2800	1053 30
1240	146 28	2840	1079 26
1280	118 26	2880	1102 23
1320	92 22	2920	1122 20
1360	70 19	2960	1139 17
1400	51 15	3000	1153 14
1440	36 11	3040	1162 9
1480	25 8	3080	1169 7
1520	17 3	3120	1172 +3
1560	14 0	3160	1171 -1
1600	14	3200	1167 -4

The quantities tabulated are in units of the seventh decimal.

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Inequalities of the Common Logarithm of the Radius multiplied by 3—Continued.

TABLE XLV.

Arg. VIII.	Equation.
d.	
0	115-20
480	95 18
960	77 16
1440	61 12
1920	49 9
2400	40 6
2880	34 2
3360	32 + 1
3840	33 + 4
4320	37 8
4800	45 11
5280	56 14
5760	70 17
6240	87 18
6720	105 21
7200	126 22
7680	148 23
8160	171 23
8640	194 24
9120	218 23
9600	241 23
10080	264 21
10560	285 20
11040	305 18
11520	323 16
12000	339 13
12480	352 9
12960	361 7
13440	368 + 3
13920	371 + 1
14400	370 5
14880	365 8
15360	357 11
15840	346 15
16320	331 18
16800	313 20
17280	293 23
17760	270 24
18240	246 24
18720	222 24
19200	197 25
19680	172 25
20160	147 22
20640	125 22
21120	103 19
21600	84

TABLE XLVI.

Arg. IX.	Equation.	Arg. IX.	Equation.
d.		d.	
0	131 + 22	5400	333 - 41
120	153 29	5520	292 41
240	182 34	5640	251 39
360	216 38	5760	212 35
480	254 42	5880	177 32
600	296 43	6000	145 27
720	339 44	6120	118 19
840	383 43	6240	99 13
960	426 41	6360	86 5
1080	467 37	6480	81 + 3
1200	504 34	6600	84 12
1320	538 30	6720	96 19
1440	568 24	6840	115 27
1560	592 19	6960	142 33
1680	611 14	7080	175 38
1800	625 9	7200	213 42
1920	634 4	7320	255 46
2040	638 + 1	7440	301 46
2160	639 - 3	7560	347 45
2280	636 - 5	7680	392 44
2400	631 7	7800	436 39
2520	624 7	7920	475 35
2640	617 8	8040	510 28
2760	609 8	8160	538 21
2880	601 6	8280	559 12
3000	595 5	8400	571 + 4
3120	590 4	8520	575 - 4
3240	586 2	8640	571 13
3360	584 - 1	8760	558 21
3480	583 0	8880	537 28
3600	583 + 1	9000	509 33
3720	584 + 1	9120	476 39
3840	585 + 0	9240	437 42
3960	585 - 2	9360	395 45
4080	583 4	9480	350 44
4200	579 7	9600	306 40
4320	572 10	9720	263 40
4440	562 14	9840	223 35
4560	548 19	9960	188 30
4680	529 23	10080	158 24
4800	506 28	10200	134 15
4920	478 32	10320	119 8
5040	446 35	10440	111 0
5160	411 38	10560	111 + 9
5280	373 40	10680	120 + 17
5400	333	10800	137

TABLE XLVII.

Arg. X.	Equation.
d.	
0	141 - 21
40	120 20
80	100 19
120	81 18
160	63 15
200	48 13
240	35 11
280	24 9
320	15 6
360	9 4
400	5 - 1
440	4 + 2
480	6 4
520	10 7
560	17 9
600	26 11
640	37 14
680	51 15
720	66 18
760	84 18
800	102 20
840	122 21
880	143 22
920	165 22
960	187 22
1000	209 22
1040	231 21
1080	252 21
1120	273 20
1160	293 19
1200	312 17
1240	329 16
1280	345 14
1320	359 11
1360	370 10
1400	380 7
1440	387 5
1480	392 + 2
1520	394 0
1560	394 - 3
1600	391 5
1640	386 8
1680	378 10
1720	368 13
1760	355 14
1800	341 17
1840	324 18
1880	306 20
1920	286 21
1960	265 22
2000	243 22
2040	221 23
2080	198 23
2120	175 22
2160	153 22
2200	131

TABLE XLVIII.

Arg. XI.	Equation.
d.	
0	97 0
80	97 + 2
160	99 4
240	103 6
320	109 7
400	116 9
480	125 10
560	135 12
640	147 12
720	159 13
800	172 14
880	186 14
960	200 14
1040	214 14
1120	228 13
1200	241 13
1280	254 11
1360	265 10
1440	275 9
1520	284 8
1600	292 5
1680	297 4
1760	301 + 2
1840	303 0
1920	303 - 3
2000	300 3
2080	297 6
2160	291 8
2240	283 9
2320	274 10
2400	264 12
2480	252 12
2560	240 14
2640	226 14
2720	212 14
2800	198 14
2880	184 13
2960	171 13
3040	157 12
3120	145 11
3200	134 11
3280	123 8
3360	115 7
3440	108 6
3520	102 6
3600	99 3
3680	97 2
3760	97 0
3840	100 + 3
3920	104 4
4000	110 + 6

The quantities tabulated are in units of the seventh decimal.

TABLES OF
Inequalities of the Latitude.

TABLE LXI.

Arg. XXII.	Equation.	Arg. XXII.	Equation.
d.	"	d.	"
0	7.01—6	2240	0.25+7
40	6.95—7	2280	0.32+8
80	6.88—8	2320	0.40+10
120	6.80—9	2360	0.50+10
160	6.71—10	2400	0.60+11
200	6.61—12	2440	0.71+13
240	6.49—12	2480	0.84+13
280	6.37—13	2520	0.97+14
320	6.24—14	2560	1.11+15
360	6.10—15	2600	1.26+15
400	5.95—15	2640	1.41+17
440	5.80—16	2680	1.58+17
480	5.64—17	2720	1.75+17
520	5.47—18	2760	1.92+19
560	5.29—18	2800	2.11+18
600	5.11—18	2840	2.29+19
640	4.93—19	2880	2.48+20
680	4.74—20	2920	2.68+20
720	4.54—20	2960	2.88+20
760	4.35—20	3000	3.08+20
800	4.15—20	3040	3.28+20
840	3.95—21	3080	3.48+20
880	3.74—20	3120	3.68+21
920	3.54—20	3160	3.89+20
960	3.34—20	3200	4.09+20
1000	3.14—20	3240	4.29+20
1040	2.94—20	3280	4.49+19
1080	2.74—20	3320	4.68+19
1120	2.54—19	3360	4.87+19
1160	2.35—19	3400	5.06+18
1200	2.16—18	3440	5.24+18
1240	1.98—18	3480	5.42+17
1280	1.80—17	3520	5.59+17
1320	1.63—17	3560	5.76+15
1360	1.46—15	3600	5.91+15
1400	1.31—16	3640	6.06+14
1440	1.15—14	3680	6.20+14
1480	1.01—13	3720	6.34+12
1520	0.88—13	3760	6.46+12
1560	0.75—12	3800	6.58+10
1600	0.63—10	3840	6.68+10
1640	0.53—10	3880	6.78+8
1680	0.43—9	3920	6.86+8
1720	0.34—7	3960	6.94+6
1760	0.27—7	4000	7.00+5
1800	0.20—5	4040	7.05+4
1840	0.15—4	4080	7.09+3
1880	0.11—3	4120	7.12+2
1920	0.08—2	4160	7.14+0
1960	0.06—1	4200	7.14+0
2000	0.05—0	4240	7.14—2
2040	0.05+2	4280	7.12—3
2080	0.07+3	4320	7.09—4
2120	0.10+4	4360	7.05—5
2160	0.14+5	4400	7.00—6
2200	0.19+6	4440	6.94—7
2240	0.25+6	4480	6.87—7

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Inequalities of the Latitude—Continued.

TABLE LXII.

A.	d. 0	d. 120	d. 240	d. 360	d. 480	d. 600	d. 720	d. 840	d. 960	d. 1080	d. 1200	d. 1320	d. 1440	d. 1560	d. 1680	d. 1800	d. 1920	d. 2040	d. 2160
0	381	401	417	427	430	426	415	399	378	353	328	302	279	259	245	236	235	239	248
1	382	407	428	443	452	453	446	434	415	392	366	340	315	293	276	265	261	263	271
2	374	404	430	452	466	473	471	464	449	429	404	379	353	329	309	296	289	289	295
3	360	393	424	451	471	484	489	488	478	462	440	417	391	366	345	328	319	316	320
4	339	375	410	441	467	487	499	504	501	489	472	451	427	402	380	362	349	343	345
5	315	352	390	425	456	482	501	512	515	510	498	481	460	436	413	393	379	369	368
6	289	327	366	404	439	470	494	512	522	523	517	504	487	465	443	422	405	393	388
7	263	301	340	380	418	453	483	506	522	529	529	521	507	489	468	447	428	414	405
8	240	276	315	355	395	433	467	494	515	528	534	531	522	506	487	467	447	430	419
9	219	254	292	332	372	411	448	479	504	523	534	535	530	528	501	482	462	443	428
10	201	234	271	310	350	389	427	461	490	512	528	533	532	524	510	491	471	451	434
11	187	218	252	289	328	368	407	442	473	498	517	527	529	524	513	497	477	456	437
12	174	203	236	271	309	348	386	422	454	482	503	516	522	520	512	498	479	458	437
13	163	190	221	255	290	328	365	401	434	462	485	501	510	512	507	495	478	457	436
14	154	179	208	239	273	308	344	378	411	440	463	482	494	499	496	487	473	454	432
15	147	170	196	225	256	289	322	355	387	415	439	460	474	482	482	476	464	447	427
16	142	162	186	212	240	270	300	331	361	389	412	433	449	460	463	460	452	438	420
17	139	157	178	201	225	252	279	307	334	360	382	404	421	434	440	440	435	425	410
18	141	156	173	192	213	236	259	284	308	331	352	373	391	404	413	416	415	408	397
19	146	157	171	187	204	222	242	262	283	303	322	342	359	374	383	389	391	388	381
20	155	163	173	185	198	212	228	244	261	278	295	311	327	342	353	361	365	366	362
21	167	172	179	187	196	206	218	230	242	256	270	284	298	312	323	332	338	342	341
22	181	183	186	192	197	204	212	220	229	239	250	260	272	285	295	305	312	318	321
23	196	195	196	198	200	204	209	214	220	226	234	242	251	262	271	281	289	296	300
24	210	207	205	204	205	206	209	211	214	218	223	228	235	244	252	261	269	276	282
25	223	218	213	211	209	209	209	210	211	213	217	219	224	231	237	245	252	260	266
26	235	226	220	216	213	211	210	210	210	211	212	214	217	222	227	233	240	247	253
27	245	234	225	220	215	212	211	210	210	210	210	211	213	216	220	225	230	236	243
28	254	241	230	222	216	212	211	209	209	209	208	210	210	212	215	219	223	228	234
29	264	248	235	225	217	212	210	208	208	208	207	208	208	210	211	214	217	220	225
30	275	257	241	229	219	213	209	207	207	206	205	206	206	207	207	209	210	213	216
31	287	266	250	235	223	215	210	207	206	205	204	205	204	204	203	203	204	205	205
32	301	279	260	244	230	220	213	209	207	205	203	203	202	201	199	197	195	194	194
33	316	294	274	256	240	228	219	213	210	207	205	203	200	198	195	191	187	184	181
34	331	310	289	270	253	239	228	221	215	211	208	204	201	196	191	186	179	174	168
35	344	324	305	285	268	252	240	230	223	217	213	208	202	196	190	182	174	165	157
36	354	337	319	300	282	267	253	241	233	225	220	213	206	199	190	181	170	159	148
37	359	346	330	313	296	280	265	253	243	234	227	219	211	203	193	182	170	156	142
38	360	350	337	322	306	291	276	263	252	243	235	226	217	208	197	186	172	157	141
39	355	350	340	327	313	298	284	271	260	249	240	232	222	213	203	190	176	160	143
40	346	344	338	327	315	302	288	276	264	254	244	236	227	218	208	196	182	166	149
41	334	335	331	323	313	301	289	276	265	255	246	238	229	221	212	201	189	174	157
42	321	324	322	316	307	297	286	274	264	254	244	238	230	223	215	206	195	182	167
43	307	311	311	306	299	290	280	269	260	251	241	235	229	224	217	210	201	190	178
44	293	298	298	295	289	282	273	264	254	246	237	233	228	223	218	213	207	199	188
45	280	284	286	283	279	273	265	257	249	242	234	230	226	223	220	217	213	207	199
46	268	271	272	271	268	263	257	250	244	238	232	229	226	224	223	221	219	215	210
47	256	258	259	258	256	253	249	244	240	235	231	229	228	227	227	227	227	225	223
48	244	244	244	244	243	242	240	238	236	233	233	232	232	233	235	236	237	237	236
49	231	229	228	229	230	230	231	231	232	232	235	236	238	241	244	247	250	251	252
50	217	213	211	212	214	216	220	224	227	231	237	241	246	251	256	260	264	267	269
51	204	197	193	193	196	201	207	214	221	229	238	246	254	261	268	274	279	284	286
52	192	181	175	174	177	183	192	202	213	225	238	249	260	270	279	287	294	300	304
53	182	167	159	156	159	166	176	189	203	218	234	250	264	277	289	299	308	315	320
54	175	157	145	140	141	148	160	175	192	210	229	248	265	281	295	308	318	326	332
55	173	150	135	127	127	132	144	160	179	200	221	244	264	282	298	312	324	334	340
56	175	149	130	119	116	120	131	147	167	189	212	237	259	280	298	313	326	337	344
57	181	152	130	115	110	112	121	137	156	179	202	228	252	274	293	310	324	335	342
58	192	161	136	118	109	108	115	129	147	170	193	219	244	266	286	304	318	329	337
59	205	173	146	125	113	109	113	124	141	162	185	210	234	257	278	295	309	321	328
60	221	188	159	136	121	114	115	123	137	155	177	201	224	247	267	284	298	309	317

The horizontal argument of this table is Arg. I.

Inequalities of the Latitude—Continued.

TABLE LXII—Continued.

d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	A.
2280	2400	2520	2640	2760	2880	3000	3120	3240	3360	3480	3600	3720	3840	3960	4080	4200	4320	4440	
259	270	281	291	297	301	302	300	296	289	281	272	263	255	248	244	241	239	239	0
282	295	307	318	325	330	331	329	322	314	302	289	275	261	249	240	232	227	224	1
305	318	332	343	352	358	359	356	348	337	323	306	287	268	251	236	223	214	208	2
329	341	354	366	376	383	384	381	373	360	343	323	300	276	254	233	215	202	193	3
351	362	375	386	397	404	407	404	395	381	363	339	313	285	257	231	209	191	178	4
371	380	392	403	414	422	425	423	414	400	380	355	326	295	263	232	205	182	165	5
389	395	405	416	426	435	440	438	430	417	396	370	339	306	271	236	204	177	156	6
403	406	414	423	434	442	448	447	441	428	409	383	352	317	280	243	208	176	152	7
413	413	418	426	435	444	450	451	447	436	418	394	364	329	291	252	214	180	152	8
419	415	417	422	431	439	446	449	446	438	423	401	373	340	302	263	224	189	158	9
421	414	412	415	421	429	436	440	440	435	423	404	379	349	313	275	237	200	168	10
421	410	404	404	408	415	422	427	429	426	418	404	382	355	323	287	250	214	181	11
419	405	395	391	393	398	404	410	414	414	409	399	382	359	331	299	264	230	197	12
416	399	386	379	377	380	385	391	396	399	397	391	379	361	337	309	278	245	213	13
412	393	377	367	363	363	366	372	378	382	384	382	374	361	342	318	291	261	231	14
407	387	369	357	350	348	350	355	361	367	371	373	369	360	346	327	303	277	248	15
400	381	363	349	340	336	336	341	347	354	360	364	364	360	350	335	316	293	267	16
393	375	358	343	333	328	327	330	336	344	352	358	361	360	355	344	329	309	285	17
383	367	352	338	327	321	320	323	329	337	346	355	360	363	361	354	343	326	305	18
370	358	345	332	323	317	316	319	325	333	343	353	361	366	368	365	357	343	325	19
355	346	337	326	319	314	313	316	322	331	342	353	363	371	375	375	370	360	345	20
338	333	327	319	314	310	310	314	320	330	341	353	365	374	381	384	383	376	364	21
320	318	315	311	307	306	307	311	318	328	340	352	365	376	385	391	393	389	380	22
303	303	303	302	300	300	303	307	315	325	337	350	363	375	386	394	398	398	393	23
286	289	290	292	292	294	297	303	311	320	332	345	358	371	382	392	399	402	400	24
271	276	279	282	284	287	292	297	305	315	326	339	351	363	375	386	395	399	401	25
259	264	269	273	276	280	285	291	299	308	318	330	341	353	364	375	385	392	396	26
248	254	259	264	268	273	279	285	292	300	310	320	330	340	351	362	371	379	386	27
239	245	250	255	260	265	271	277	285	293	301	310	319	327	337	346	355	364	371	28
230	235	240	245	251	257	263	269	276	284	292	300	307	314	322	330	339	347	355	29
220	224	229	234	240	246	252	259	267	275	282	289	296	302	309	315	322	329	337	30
208	212	215	219	226	232	239	247	255	263	271	279	285	291	297	302	307	313	320	31
195	196	199	203	208	214	222	231	240	249	258	267	274	280	286	290	295	300	306	32
180	180	180	183	187	193	201	210	221	232	242	253	261	268	275	279	283	288	293	33
164	162	161	161	164	169	177	186	198	211	223	236	246	255	263	268	273	278	283	34
150	144	140	138	139	143	150	159	172	186	201	215	229	241	250	257	263	268	273	35
138	129	122	117	116	117	122	131	144	159	175	193	209	223	235	245	252	258	263	36
129	117	108	100	95	94	97	105	116	132	149	168	187	204	219	231	240	247	253	37
125	111	98	87	79	74	75	81	91	105	124	144	164	184	201	216	226	235	241	38
126	109	94	80	69	62	59	62	70	83	101	121	143	164	184	200	212	222	228	39
131	113	96	80	66	56	51	50	56	67	83	102	124	146	167	184	198	208	215	40
140	121	103	86	71	57	49	46	48	56	70	89	110	132	152	170	185	195	201	41
150	133	115	97	80	66	55	49	48	53	65	80	100	121	141	159	173	184	189	42
163	147	130	112	95	80	67	59	54	56	65	78	95	115	134	151	164	174	179	43
176	161	147	130	114	98	84	74	67	66	71	80	95	112	129	145	158	166	170	44
189	177	164	150	134	119	104	92	83	79	80	87	98	112	128	142	153	161	163	45
203	194	182	170	156	141	126	113	102	95	93	96	103	114	127	139	149	156	157	46
217	210	201	190	178	164	149	134	122	113	107	106	109	117	126	137	145	150	152	47
233	228	221	211	200	187	172	157	142	131	121	116	116	119	126	133	140	144	145	48
250	246	240	232	222	209	195	179	163	148	136	127	122	121	123	128	133	136	136	49
268	266	261	254	243	231	217	200	183	166	150	137	128	122	120	122	124	127	126	50
287	285	282	275	265	253	238	221	202	183	164	147	134	123	117	115	115	115	115	51
305	304	301	295	285	273	259	241	221	200	178	158	140	125	115	109	106	105	103	52
321	321	319	313	304	292	277	259	238	216	193	169	148	129	114	104	98	95	92	53
335	335	334	328	320	308	294	276	255	232	207	181	157	135	117	103	93	87	83	54
344	345	344	339	331	320	306	289	268	245	220	193	167	143	122	104	92	84	79	55
348	350	349	345	337	327	314	298	278	256	231	205	178	152	129	110	95	85	78	56
348	350	349	345	339	329	317	302	284	263	240	215	189	163	140	119	102	90	82	57
342	344	343	340	334	326	315	301	285	266	245	222	198	174	151	130	113	100	91	58
333	335	334	331	325	318	308	296	282	266	248	228	206	184	163	144	126	113	103	59
321	322	321	318	313	306	297	287	275	262	246	230	213	194	176	158	142	129	119	60

The quantities tabulated are hundredths of a second of arc.

Inequalities of the Latitude—Continued.

TABLE LXII—Continued.

A.	d. o	d. 120	d. 240	d. 360	d. 480	d. 600	d. 720	d. 840	d. 960	d. 1080	d. 1200	d. 1320	d. 1440	d. 1560	d. 1680	d. 1800	d. 1920	d. 2040	d. 2160
60	221	188	159	136	121	114	115	123	137	155	177	201	224	247	267	284	298	309	317
61	236	204	175	150	133	122	119	124	135	151	171	192	214	235	255	271	285	296	303
62	253	221	192	167	146	133	127	128	134	147	165	182	203	223	241	258	271	281	288
63	269	239	211	184	162	146	136	133	135	144	158	173	191	209	227	242	255	265	272
64	285	257	230	203	180	161	147	140	138	143	153	164	179	195	211	225	238	248	255
65	301	276	250	223	198	177	160	149	142	142	148	155	167	180	194	207	219	230	237
66	318	296	271	245	219	196	175	159	149	144	144	148	155	166	177	189	200	210	218
67	336	316	293	267	242	217	193	174	159	149	144	143	146	153	161	171	180	190	198
68	354	337	316	291	266	240	215	191	172	158	147	142	140	143	148	154	162	171	179
69	370	357	339	316	291	264	238	212	190	172	156	146	140	137	138	142	147	154	161
70	385	375	359	339	316	290	263	237	212	190	170	156	145	138	135	134	137	141	146
71	396	389	377	360	340	316	290	263	237	212	190	172	157	146	138	134	132	133	136
72	401	398	390	377	360	339	315	290	264	239	214	194	175	160	148	140	135	132	132
73	401	402	397	389	376	359	338	315	291	266	242	219	198	180	165	152	144	137	134
74	396	399	398	394	385	373	356	337	316	293	270	247	225	205	187	172	160	149	142
75	385	391	393	393	389	381	369	355	337	318	298	275	253	233	213	196	181	167	157
76	370	377	382	386	386	383	376	367	354	339	322	301	281	261	241	222	204	188	175
77	353	361	368	374	378	379	378	374	365	354	341	324	306	287	268	248	230	211	195
78	335	344	352	360	366	371	374	374	370	365	356	343	327	310	292	273	253	234	216
79	319	327	335	344	353	360	367	371	372	370	366	356	344	330	313	295	275	255	235
80	305	311	319	329	338	348	357	365	369	372	371	365	356	345	330	313	294	274	253
81	292	298	305	315	324	335	346	356	364	370	372	370	364	355	343	327	309	289	267
82	282	287	294	302	312	323	335	346	356	365	369	371	369	362	352	338	320	301	279
83	272	277	283	290	300	311	324	336	348	358	364	370	370	365	358	345	329	310	288
84	262	267	273	280	289	300	312	324	337	349	357	365	368	366	360	350	336	318	297
85	251	257	262	269	277	287	298	311	324	337	347	357	362	363	360	352	340	323	304
86	240	245	250	257	264	273	284	295	309	322	334	345	353	356	356	351	342	327	310
87	226	233	238	243	249	257	266	277	290	303	317	329	339	345	349	347	341	329	315
88	213	220	224	228	233	239	246	256	268	281	296	309	321	331	337	339	337	329	318
89	200	207	210	213	216	219	225	233	243	255	271	284	298	311	320	327	329	326	319
90	187	193	196	197	198	199	202	208	216	228	243	256	272	287	300	310	317	319	317
91	177	182	183	182	181	179	180	183	189	198	213	226	243	259	275	290	301	308	311
92	169	173	172	169	165	161	159	159	162	170	182	195	212	230	248	266	281	293	302
93	163	166	164	158	152	145	140	137	137	142	152	165	181	200	220	240	259	276	290
94	158	160	156	149	141	132	123	117	115	118	125	137	152	172	192	215	236	257	276
95	153	154	149	141	131	120	109	101	97	97	102	112	126	145	166	190	213	237	260
96	147	147	143	134	123	110	98	87	81	79	82	91	104	121	143	167	192	218	243
97	139	139	135	125	114	101	88	76	68	64	65	73	85	102	123	147	172	200	227
98	130	130	125	117	105	92	78	66	57	53	52	59	69	85	105	129	155	183	212
99	119	118	114	107	96	83	70	58	48	42	41	47	56	71	90	113	139	167	198
100	108	107	103	96	86	74	62	50	39	34	32	36	45	58	76	99	124	152	183
101	98	95	91	85	77	66	54	43	33	26	25	27	34	47	64	85	109	136	166
102	89	85	81	77	69	59	49	37	27	21	18	19	25	36	52	71	94	120	149
103	84	79	75	70	64	55	45	34	25	17	15	13	18	27	40	58	79	103	130
104	83	76	72	67	62	54	45	35	25	17	13	10	13	19	30	46	64	85	111
105	87	79	74	69	64	58	49	40	30	20	15	11	11	15	23	35	50	69	91
106	95	86	80	76	71	65	58	48	38	29	21	15	13	14	19	28	39	54	73
107	107	98	91	86	82	77	70	61	51	41	31	24	19	18	19	24	33	44	58
108	122	113	105	101	97	92	85	77	67	56	45	37	30	26	24	26	31	38	49
109	140	131	123	118	114	109	103	95	85	74	62	52	44	38	34	33	35	38	45
110	160	151	143	139	134	128	122	114	105	94	81	71	62	54	48	45	44	45	48
111	181	173	166	161	155	150	143	135	125	114	101	90	80	71	65	60	57	56	57
112	204	198	191	185	179	172	165	156	145	134	120	109	99	90	83	77	74	72	73
113	229	224	219	213	205	197	188	178	166	153	140	128	117	108	101	96	93	92	91
114	255	253	248	242	234	224	213	201	188	174	160	146	135	126	119	114	113	112	113
115	282	282	280	274	265	254	242	227	212	196	180	165	153	143	137	133	133	133	136
116	309	312	312	307	299	287	273	257	239	221	203	186	172	162	154	151	151	154	159
117	334	341	344	341	334	322	307	289	269	249	229	209	193	181	173	170	170	175	181
118	356	367	374	374	369	358	343	325	303	280	258	236	218	203	194	189	190	196	203
119	372	388	399	404	402	394	380	362	340	316	291	267	246	229	217	211	211	217	225
120	381	401	417	427	430	426	415	399	378	353	328	302	279	259	245	236	235	239	248

The horizontal argument of this table is Arg. I.

Inequalities of the Latitude—Continued.

TABLE LXII—Continued.

d. 2280	d. 2400	d. 2520	d. 2640	d. 2760	d. 2880	d. 3000	d. 3120	d. 3240	d. 3360	d. 3480	d. 3600	d. 3720	d. 3840	d. 3960	d. 4080	d. 4200	d. 4320	d. 4440	A.
321	322	321	318	313	306	297	287	275	262	246	230	213	194	176	158	142	129	119	60
307	308	307	304	299	292	285	276	266	255	243	231	217	203	188	173	159	148	138	61
292	293	291	288	284	278	271	263	256	248	239	230	221	211	200	189	178	168	159	62
276	277	275	272	268	263	258	251	246	241	235	229	224	219	212	205	197	190	182	63
259	261	259	257	254	250	245	240	237	234	232	229	229	228	225	223	218	213	207	64
241	244	244	243	240	237	234	231	229	229	229	231	234	237	239	241	240	238	234	65
223	227	228	228	227	225	224	223	223	225	228	233	240	247	254	260	263	264	263	66
204	209	211	213	214	214	214	215	217	222	228	236	246	258	268	279	286	291	292	67
186	191	195	197	200	202	204	207	211	218	227	238	252	267	282	296	308	317	322	68
168	173	178	182	186	189	193	198	205	213	225	239	255	274	293	311	328	341	350	69
152	157	162	167	172	176	181	188	197	207	220	237	255	277	299	322	343	360	373	70
140	144	149	153	158	164	169	177	186	198	213	231	251	275	300	326	351	373	391	71
133	136	139	142	147	152	158	165	175	187	202	221	243	268	295	324	353	379	402	72
132	132	133	135	138	142	147	154	164	175	190	208	230	256	284	315	347	377	405	73
137	134	133	132	133	135	139	145	152	163	176	194	215	239	268	300	333	367	398	74
148	141	137	134	132	132	133	137	142	151	162	178	197	221	248	280	315	350	385	75
163	153	146	139	135	132	131	132	135	141	149	163	180	201	227	257	291	328	364	76
181	168	157	148	141	135	131	129	130	133	139	149	163	182	205	234	267	303	340	77
199	183	170	158	148	139	133	128	126	127	130	137	148	164	185	211	242	277	314	78
217	199	183	168	156	144	135	128	124	122	122	127	136	149	167	190	219	252	289	79
233	213	194	178	162	149	138	129	122	118	117	119	126	136	152	172	198	229	265	80
246	224	204	185	167	152	139	128	120	114	111	112	117	126	139	157	181	210	243	81
257	234	212	190	171	153	139	126	116	109	105	105	109	116	128	145	167	193	225	82
266	242	218	195	174	154	137	123	112	104	99	99	101	108	119	134	155	179	209	83
274	249	224	200	177	155	136	121	108	99	94	92	94	101	111	125	144	167	195	84
281	257	231	205	181	157	137	120	106	96	89	87	88	94	104	118	135	157	183	85
289	264	239	213	187	162	141	122	106	94	87	84	84	89	99	112	128	148	172	86
296	273	248	223	197	171	148	128	110	97	89	84	84	88	96	108	123	142	163	87
302	282	260	235	210	184	160	139	120	105	96	90	88	90	97	108	121	138	157	88
307	291	272	249	226	201	177	156	136	120	108	100	97	98	103	111	122	137	154	89
310	299	284	265	244	221	198	177	157	139	127	117	112	110	113	119	128	141	154	90
310	304	294	280	263	243	222	202	182	164	150	139	132	128	129	132	138	147	157	91
307	306	302	294	281	265	248	229	210	192	178	165	156	150	148	148	151	158	164	92
300	306	308	305	297	287	273	257	239	223	208	194	183	175	170	167	167	171	174	93
291	303	310	313	312	306	296	283	269	253	238	224	211	201	194	188	185	185	186	94
280	296	310	319	322	322	317	308	296	282	268	253	239	227	217	209	204	201	199	95
267	289	307	321	330	335	334	329	321	309	295	281	266	252	240	229	221	215	210	96
254	279	302	320	335	344	348	347	342	333	320	306	290	275	261	248	237	228	221	97
241	269	295	317	336	350	359	362	360	353	342	328	313	296	280	264	251	239	230	98
228	257	286	312	334	353	365	372	374	370	361	349	333	315	297	280	264	249	238	99
214	244	275	304	330	352	368	379	384	384	377	366	351	332	314	295	276	259	245	100
198	229	262	292	321	346	366	381	390	393	380	366	349	329	309	289	269	253	231	101
180	212	245	277	308	335	359	378	390	398	398	391	380	364	345	324	302	281	261	102
160	191	224	257	289	319	346	368	385	397	401	399	390	376	359	338	316	294	273	103
139	168	200	233	266	298	327	353	374	389	399	401	396	386	371	352	330	308	287	104
116	144	174	206	239	271	302	331	355	375	389	397	398	392	381	364	344	323	302	105
95	120	147	177	209	241	273	304	331	355	374	387	392	392	386	373	356	337	317	106
76	98	121	149	178	209	241	272	302	329	352	370	381	387	386	378	365	349	331	107
62	80	100	122	150	178	208	240	270	300	326	348	364	376	380	377	369	357	342	108
55	68	83	102	125	150	178	208	238	269	297	322	343	359	369	371	369	361	349	109
54	63	74	89	107	129	154	181	209	239	268	295	318	339	353	360	363	358	351	110
60	66	73	84	98	116	136	159	186	213	241	268	294	316	334	345	352	351	348	111
73	76	81	88	98	111	128	147	170	194	220	246	271	295	314	328	338	342	342	112
91	93	96	100	107	117	129	144	163	183	205	229	252	275	295	311	323	329	331	113
114	115	117	119	124	130	139	150	164	180	198	218	239	260	278	294	307	315	319	114
137	140	142	144	147	151	157	164	174	186	200	215	232	249	266	280	293	301	306	115
162	166	169	172	175	178	181	185	191	199	207	218	230	244	256	269	280	287	293	116
187	193	198	202	205	207	209	211	214	217	221	226	234	242	251	260	269	275	279	117
241	219	226	233	236	239	240	240	240	239	239	240	241	245	248	254	259	263	266	118
235	245	255	262	267	270	271	270	268	264	260	255	251	249	248	248	250	251	254	119
259	270	281	291	297	301	302	300	296	289	281	272	263	255	248	244	241	239	239	120

The quantities tabulated are hundredths of a second of arc.

Inequalities of the Latitude—Factor to be multiplied by m.

TABLE LXIII.

A.	d. o	d. 240	d. 480	d. 720	d. 960	d. 1200	d. 1440	d. 1680	d. 1920	d. 2160	d. 2400	d. 2640	d. 2880	d. 3120	d. 3360	d. 3600	d. 3840	d. 4080	d. 4320
0	60	64	64	62	59	57	56	58	61	66	72	77	80	78	70	58	45	32	22
2	60	65	65	62	58	55	52	52	54	58	63	70	76	78	75	67	56	44	33
4	59	64	65	62	57	52	48	47	47	50	55	62	69	75	76	72	64	54	43
6	56	61	62	60	55	50	46	44	43	45	48	54	62	70	73	69	61	51	
8	51	56	58	56	53	48	45	42	42	42	44	48	55	62	68	70	68	63	55
10	44	49	51	51	49	46	44	42	42	42	42	44	48	54	60	63	64	61	55
12	37	41	44	46	45	43	43	42	42	43	42	42	43	46	50	54	56	55	52
14	31	35	38	40	40	40	40	41	42	43	41	40	39	39	41	44	47	48	47
16	28	31	33	35	36	36	38	39	40	41	40	38	36	34	34	36	38	41	42
18	29	30	31	32	33	33	33	34	35	37	36	35	32	30	28	29	31	35	37
20	33	33	32	32	31	29	29	28	28	30	30	30	28	26	24	25	27	31	35
22	39	39	37	34	31	27	25	22	20	21	22	23	23	23	23	23	26	30	34
24	47	46	43	39	34	27	22	17	13	12	13	16	18	20	21	23	26	30	34
26	54	53	50	45	37	29	22	14	8	6	6	9	13	17	21	24	27	31	35
28	57	58	56	51	43	33	24	14	7	3	2	4	9	14	20	24	27	31	34
30	57	59	59	55	48	38	29	19	10	4	2	2	7	13	19	23	27	29	32
32	51	56	58	56	52	44	36	26	17	11	6	5	8	12	17	21	25	26	27
34	42	48	53	55	53	49	43	35	28	20	15	12	12	14	16	19	20	21	21
36	31	38	45	51	53	53	50	45	38	32	26	20	18	17	17	17	17	16	15
38	20	27	35	44	50	53	54	52	48	43	38	31	26	22	20	17	15	12	9
40	11	16	26	36	45	52	56	56	55	52	47	41	35	30	24	19	15	11	7
42	6	9	17	28	38	47	53	57	58	56	54	49	44	38	31	25	19	14	8
44	6	7	12	22	31	41	48	53	55	56	56	54	50	46	40	33	27	20	14
46	11	9	11	17	25	33	40	45	49	52	54	55	55	53	49	43	37	30	23
48	20	15	14	16	21	26	32	36	41	45	49	53	56	58	57	54	49	42	34
50	31	23	19	18	18	21	24	28	32	37	42	48	55	61	64	63	60	55	47
52	41	33	26	21	18	18	19	21	24	29	35	43	52	61	67	70	70	65	58
54	50	41	33	26	21	18	16	17	19	23	30	38	48	59	68	74	75	73	66
56	54	47	39	32	25	20	17	16	17	21	26	34	44	55	65	73	77	76	71
58	55	49	43	36	30	25	20	18	19	21	25	31	39	50	60	69	75	75	72
60	53	49	45	40	35	30	25	23	22	23	25	29	36	44	53	63	69	72	70
62	48	47	45	43	40	36	31	28	26	26	27	29	32	38	46	55	62	66	67
64	43	44	45	45	44	41	37	34	30	28	28	28	29	33	39	47	55	61	63
66	38	41	44	46	47	46	42	38	33	30	28	27	27	29	33	41	49	56	61
68	35	40	43	47	49	49	45	40	35	30	27	25	24	25	29	36	45	53	59
70	34	39	43	47	50	50	47	42	35	29	25	22	21	22	26	33	42	52	59
72	35	39	44	47	50	50	47	42	35	28	23	20	19	20	25	32	41	52	60
74	35	39	43	47	49	50	47	43	36	28	22	19	17	19	24	31	41	51	60
76	35	39	42	45	47	49	47	44	38	31	24	20	18	19	24	31	39	50	59
78	33	36	39	42	45	47	47	45	41	35	28	23	20	21	24	30	38	47	55
80	29	31	34	37	41	45	47	48	46	41	35	29	25	23	25	29	35	42	50
82	23	25	28	32	37	42	47	50	51	48	43	37	31	27	26	28	31	37	43
84	16	17	20	26	32	39	46	52	55	55	51	45	38	32	28	27	28	32	36
86	10	11	14	19	27	35	43	51	57	59	58	52	41	37	31	28	27	31	
88	7	6	9	14	22	31	40	49	56	60	61	57	50	42	34	30	27	27	28
90	8	5	7	11	18	27	36	45	52	57	60	58	53	45	38	33	30	29	29
92	12	8	8	11	16	23	31	39	46	51	55	56	53	48	42	38	35	34	34
94	21	15	13	13	16	21	27	32	38	43	48	50	50	48	45	42	41	40	41
96	32	25	20	18	19	21	24	27	31	35	40	43	46	46	46	46	46	47	48
98	45	36	30	25	23	23	24	25	27	29	33	37	41	44	45	47	49	52	54
100	56	47	39	33	29	27	26	26	27	29	30	32	36	40	43	46	50	53	57
102	65	56	48	40	36	33	31	30	29	29	30	31	34	37	40	43	47	51	56
104	70	62	54	47	42	39	38	37	37	36	35	34	34	35	36	37	40	44	50
106	72	66	58	52	48	47	46	47	47	46	45	42	39	35	33	31	32	35	40
108	71	66	60	56	53	53	54	56	58	58	59	52	46	39	32	27	24	24	29
110	67	65	61	58	57	58	60	64	67	69	68	63	55	41	33	24	17	15	18
112	64	63	61	59	59	61	64	69	74	77	77	73	65	52	38	25	15	9	10
114	61	62	61	60	60	62	65	71	76	81	82	80	73	60	45	30	17	8	6
116	59	62	61	60	60	61	64	69	74	80	83	83	78	68	54	38	23	12	7
118	59	63	63	61	59	60	61	64	68	74	79	82	81	71	63	48	33	20	13
120	60	64	64	62	59	57	56	58	61	66	72	77	80	78	70	58	45	32	22

The horizontal argument is Arg. I. The quantities tabulated are ten thousandths of a second of arc.

*Inequalities of the Latitude—Factors to be multiplied by m , m^2 , and m^3 .*TABLE LXIV—Factor to be $\times m$.

TABLE LXV. TABLE LXVI.

Arg.	Factor.	Arg.	Factor.	Arg.	Factor.	Arg.	Factor.	Arg.	Fact. $\times m^2$	Fact. $\times m^3$
d.	"	d.	"	d.	"	d.	"	d.		
0	+2.5369	1100	+3.2255	2200	-2.7016	3300	-3.6210	0	+112	-11
20	2.6495	1120	3.1393	2220	2.7915	3320	3.5479	80	81	31
40	2.7594	1140	3.0508	2240	2.8794	3340	3.4716	160	48	33
60	2.8664	1160	2.9601	2260	2.9654	3360	3.3921	240	+15	33
80	2.9705	1180	2.8671	2280	3.0493	3380	3.3095	320	-18	33
100	3.0715	1200	2.7721	2300	3.1311	3400	3.2238	400	50	32
120	3.1693	1220	2.6751	2320	3.2108	3420	3.1351	480	82	32
140	3.2638	1240	2.5763	2340	3.2883	3440	3.0433	560	112	30
160	3.3550	1260	2.4756	2360	3.3635	3460	2.9487	640	140	28
180	3.4426	1280	2.3732	2380	3.4365	3480	2.8512	720	166	26
200	3.5267	1300	2.2692	2400	3.5070	3500	2.7509	800	189	23
220	3.6071	1320	2.1637	2420	3.5752	3520	2.6478	880	209	20
240	3.6838	1340	2.0568	2440	3.6410	3540	2.5421	960	226	17
260	3.7567	1360	1.9486	2460	3.7042	3560	2.4338	1040	240	14
280	3.8258	1380	1.8391	2480	3.7649	3580	2.3231	1120	250	10
300	3.8909	1400	1.7284	2500	3.8230	3600	2.2099	1200	257	7
320	3.9520	1420	1.6167	2520	3.8784	3620	2.0944	1280	261	4
340	4.0091	1440	1.5040	2540	3.9312	3640	1.9767	1360	261	0
360	4.0620	1460	1.3904	2560	3.9813	3660	1.8569	1440	258	6
380	4.1109	1480	1.2761	2580	4.0285	3680	1.7350	1520	252	3
400	4.1556	1500	1.1610	2600	4.0730	3700	1.6112	1600	243	9
420	4.1962	1520	1.0452	2620	4.1146	3720	1.4856	1680	231	12
440	4.2325	1540	0.9290	2640	4.1532	3740	1.3583	1760	217	14
460	4.2647	1560	0.8123	2660	4.1890	3760	1.2294	1840	200	17
480	4.2926	1580	0.6952	2680	4.2217	3780	1.0991	1920	181	19
500	4.3163	1600	0.5778	2700	4.2515	3800	0.9674	2000	161	20
520	4.3357	1620	0.4602	2720	4.2782	3820	0.8345	2080	138	23
540	4.3510	1640	0.3425	2740	4.3018	3840	0.7005	2160	114	24
560	4.3620	1660	0.2247	2760	4.3223	3860	0.5656	2240	88	26
580	4.3688	1680	+0.1070	2780	4.3397	3880	0.4299	2320	62	27
600	4.3715	1700	-0.0106	2800	4.3538	3900	0.2935	2400	35	28
620	4.3700	1720	0.1280	2820	4.3648	3920	0.1566	2480	-7	28
640	4.3644	1740	0.2452	2840	4.3725	3940	-0.0193	2560	+21	28
660	4.3547	1760	0.3620	2860	4.3770	3960	+0.1183	2640	49	27
680	4.3410	1780	0.4784	2880	4.3781	3980	0.2560	2720	76	26
700	4.3233	1800	0.5942	2900	4.3760	4000	0.3936	2800	102	26
720	4.3016	1820	0.7096	2920	4.3705	4020	0.5310	2880	128	24
740	4.2760	1840	0.8243	2940	4.3617	4040	0.6681	2960	152	23
760	4.2466	1860	0.9382	2960	4.3495	4060	0.8047	3040	175	21
780	4.2134	1880	1.0515	2980	4.3339	4080	0.9406	3120	196	18
800	4.1765	1900	1.1638	3000	4.3149	4100	1.0757	3200	214	16
820	4.1359	1920	1.2752	3020	4.2925	4120	1.2099	3280	230	13
840	4.0917	1940	1.3857	3040	4.2667	4140	1.3430	3360	243	9
860	4.0440	1960	1.4950	3060	4.2375	4160	1.4749	3440	252	7
880	3.9929	1980	1.6033	3080	4.2048	4180	1.6053	3520	259	4
900	3.9384	2000	1.7104	3100	4.1688	4200	1.7342	3600	261	2
920	3.8806	2020	1.8162	3120	4.1292	4220	1.8614	3680	260	1
940	3.8195	2040	1.9207	3140	4.0863	4240	1.9867	3760	255	5
960	3.7554	2060	2.0238	3160	4.0399	4260	2.1101	3840	246	9
980	3.6832	2080	2.1254	3180	3.9902	4280	2.2314	3920	233	13
1000	3.6180	2100	2.2256	3200	3.9370	4300	2.3504	4000	216	17
1020	3.5449	2120	2.3242	3220	3.8805	4320	2.4670	4080	195	21
1040	3.4690	2140	2.4211	3240	3.8206	4340	2.5811	4160	172	23
1060	3.3904	2160	2.5164	3260	3.7574	4360	+2.6926	4240	145	27
1080	3.3092	2180	2.6099	3280	3.6908			4320	116	29
1100	+3.2255	2200	-2.7016	3300	-3.6210			4400	+86	-30

The Argument of the three tables on this page is the Fundamental Argument. The quantities tabulated in LXIV have four decimals of the second of arc, those in LXV five, and those in LXVI seven.

The Principal Term of the Latitude.

TABLE LXVII.

[The Argument of this table is the Fundamental Argument.]

Arg.	d. o	Daily Motion.	d. 4	Daily Motion.	d. 8	Daily Motion.	d. 12	Daily Motion.	d. 16	Daily Motion.
d.	° / ' "	"	° / ' "	"	° / ' "	"	° / ' "	"	° / ' "	"
0	-1 18 42.49	+0.388	-1 18 40.84	+0.438	-1 18 38.98	+0.486	-1 18 36.94	+0.534	-1 18 34.71	+0.582
20	1 18 32.28	0.631	1 18 29.66	0.679	1 18 26.84	0.727	1 18 23.84	0.775	1 18 20.64	0.823
40	1 18 17.25	0.871	1 18 13.67	0.919	1 18 9.89	0.967	1 18 5.93	1.014	1 18 1.77	1.062
60	1 17 57.43	1.110	1 17 52.89	1.158	1 17 48.16	1.205	1 17 43.24	1.253	1 17 38.13	1.300
80	1 17 32.83	1.348	1 17 27.35	1.395	1 17 21.67	1.442	1 17 15.80	1.490	1 17 9.75	1.537
100	1 17 3.50	1.584	1 16 57.07	1.631	1 16 50.45	1.678	1 16 43.65	1.724	1 16 36.66	1.771
120	1 16 29.48	1.818	1 16 22.11	1.864	1 16 14.56	1.910	1 16 6.82	1.957	1 15 58.90	2.003
140	1 15 50.80	2.049	1 15 42.51	2.095	1 15 34.03	2.141	1 15 25.38	2.187	1 15 16.54	2.232
160	1 15 7.51	2.278	1 14 58.31	2.323	1 14 48.93	2.368	1 14 39.36	2.413	1 14 29.62	2.458
180	1 14 19.69	2.503	1 14 9.58	2.548	1 13 59.30	2.593	1 13 48.84	2.638	1 13 38.20	2.682
200	1 13 27.38	2.726	1 13 16.39	2.770	1 13 5.22	2.814	1 12 53.88	2.857	1 12 42.36	2.901
220	1 12 30.66	2.944	1 12 18.80	2.988	1 12 6.76	3.031	1 11 54.55	3.074	1 11 42.16	3.117
240	1 11 29.61	3.159	1 11 16.89	3.202	1 11 3.99	3.244	1 10 50.93	3.286	1 10 37.70	3.328
260	1 10 24.30	3.370	1 10 10.74	3.411	1 9 57.01	3.453	1 9 43.11	3.494	1 9 29.05	3.535
280	1 9 14.83	3.576	1 9 0.44	3.617	1 8 45.89	3.657	1 8 31.18	3.698	1 8 16.31	3.738
300	1 8 1.27	3.778	1 7 46.08	3.817	1 7 30.73	3.857	1 7 15.22	3.896	1 6 59.56	3.935
320	1 6 43.74	3.974	1 6 27.76	4.013	1 6 11.63	4.052	1 5 55.35	4.090	1 5 38.91	4.128
340	1 5 22.32	4.166	1 5 5.58	4.204	1 4 48.69	4.241	1 4 31.65	4.278	1 4 14.47	4.315
360	1 3 57.13	4.352	1 3 39.65	4.388	1 3 22.02	4.425	1 3 4.25	4.461	1 2 46.33	4.497
380	1 2 28.27	4.532	1 2 10.07	4.568	1 1 51.73	4.603	1 1 33.24	4.638	1 1 14.62	4.673
400	1 0 55.86	4.708	1 0 36.96	4.742	1 0 17.92	4.776	0 59 58.75	4.809	0 59 39.45	4.843
420	0 59 20.01	4.876	0 59 0.44	4.909	0 58 40.73	4.942	0 58 20.90	4.975	0 58 0.93	5.007
440	0 57 40.84	5.039	0 57 20.62	5.071	0 57 0.27	5.103	0 56 39.80	5.134	0 56 19.20	5.165
460	0 55 58.48	5.196	0 55 37.63	5.227	0 55 16.66	5.257	0 54 55.58	5.287	0 54 34.37	5.316
480	0 54 13.04	5.346	0 53 51.60	5.375	0 53 30.04	5.404	0 53 8.36	5.433	0 52 46.57	5.462
500	0 52 24.67	5.490	0 52 2.65	5.518	0 51 40.53	5.546	0 51 18.29	5.573	0 50 55.94	5.600
520	0 50 33.49	5.627	0 50 10.92	5.654	0 49 48.25	5.680	0 49 25.48	5.706	0 49 2.60	5.732
540	0 48 39.62	5.758	0 48 16.54	5.783	0 47 53.36	5.808	0 47 30.08	5.833	0 47 6.70	5.857
560	0 46 43.22	5.882	0 46 19.64	5.906	0 45 55.97	5.930	0 45 32.21	5.953	0 45 8.35	5.976
580	0 44 44.40	5.999	0 44 20.36	6.022	0 43 56.23	6.044	0 43 32.01	6.066	0 43 7.71	6.087
600	0 42 43.32	6.109	0 42 18.84	6.130	0 41 54.28	6.151	0 41 29.63	6.172	0 41 4.90	6.192
620	0 40 40.10	6.212	0 40 15.21	6.232	0 39 50.24	6.251	0 39 25.20	6.271	0 39 0.08	6.290
640	0 38 34.88	6.309	0 38 9.61	6.327	0 37 44.27	6.345	0 37 18.85	6.363	0 36 53.36	6.381
660	0 36 27.81	6.398	0 36 2.18	6.415	0 35 36.49	6.432	0 35 10.73	6.448	0 34 44.90	6.464
680	0 34 19.01	6.480	0 33 53.06	6.496	0 33 27.05	6.511	0 33 0.97	6.526	0 32 34.84	6.541
700	0 32 8.64	6.556	0 31 42.39	6.570	0 31 16.09	6.584	0 30 49.72	6.598	0 30 23.30	6.611
720	0 29 56.83	6.624	0 29 30.31	6.637	0 29 3.74	6.650	0 28 37.11	6.662	0 28 10.44	6.674
740	0 27 43.72	6.686	0 27 16.95	6.698	0 26 50.14	6.709	0 26 23.29	6.720	0 25 56.39	6.730
760	0 25 29.45	6.741	0 25 2.46	6.751	0 24 35.44	6.761	0 24 8.38	6.770	0 23 41.28	6.780
780	0 23 14.14	6.789	0 22 46.97	6.798	0 22 19.77	6.806	0 21 52.53	6.814	0 21 25.25	6.822
800	0 20 57.95	6.830	0 20 30.62	6.837	0 20 3.25	6.844	0 19 35.86	6.851	0 19 8.44	6.858
820	0 18 41.00	6.864	0 18 13.53	6.870	0 17 46.04	6.876	0 17 18.52	6.882	0 16 50.99	6.887
840	0 16 23.43	6.892	0 15 55.85	6.897	0 15 28.25	6.902	0 15 0.64	6.906	0 14 33.01	6.910
860	0 14 5.37	6.913	0 13 37.71	6.917	0 13 10.03	6.920	0 12 42.35	6.923	0 12 14.65	6.926
880	0 11 46.94	6.928	0 11 19.23	6.930	0 10 51.50	6.932	0 10 23.77	6.934	0 9 56.03	6.936
900	0 9 28.29	6.937	0 9 0.54	6.938	0 8 32.79	6.938	0 8 5.04	6.939	0 7 37.29	6.939
920	0 7 9.53	6.939	0 6 41.78	6.938	0 6 14.03	6.938	0 5 46.28	6.937	0 5 18.53	6.936
940	0 4 50.79	6.935	0 4 23.06	6.933	0 3 55.33	6.931	0 3 27.61	6.929	0 2 59.90	6.927
960	0 2 32.20	6.925	0 2 4.51	6.922	0 1 36.83	6.919	0 1 9.16	6.915	0 0 41.51	6.912
980	0 0 13.87	6.908	+0 0 13.76	6.904	+0 0 41.36	6.900	+0 1 8.95	6.896	+0 1 36.53	6.891
1000	+0 2 4.08	6.886	0 2 31.61	6.881	0 2 59.13	6.876	0 3 26.62	6.870	0 3 54.09	6.864
1020	0 4 21.53	6.858	0 4 48.95	6.852	0 5 16.35	6.846	0 5 43.71	6.839	0 6 11.06	6.832
1040	0 6 38.37	6.825	0 7 5.65	6.818	0 7 32.91	6.810	0 8 0.13	6.802	0 8 27.32	6.794
1060	0 8 54.48	6.786	0 9 21.61	6.778	0 9 48.70	6.769	0 10 15.76	6.760	0 10 42.78	6.751
1080	+0 10 9.77	+6.742	+0 11 36.71	+6.733	+0 12 3.62	+6.723	+0 12 30.49	+6.713	+0 12 57.32	+6.703

The Principal Term of the Latitude—Continued.

TABLE LXVII—Continued.

[The Argument of this table is the Fundamental Argument.]

Arg.	d. o	Daily Motion.	d. 4	Daily Motion.	d. 8	Daily Motion.	d. 12	Daily Motion.	d. 16	Daily Motion.
d.	° / "	"	° / "	"	° / "	"	° / "	"	° / "	"
1100	+0 13 24.11	+6.692	+0 13 50.86	+6.682	+0 14 17.56	+6.671	+0 14 44.23	+6.660	+0 15 10.84	+6.649
1120	0 15 37.42	6.638	0 16 3.94	6.626	0 16 30.42	6.615	0 16 56.86	6.603	0 17 23.24	6.591
1140	0 17 49.58	6.578	0 18 15.86	6.566	0 18 42.10	6.553	0 19 8.28	6.540	0 19 34.42	6.527
1160	0 20 0.50	6.514	0 20 26.52	6.500	0 20 52.50	6.487	0 21 18.41	6.473	0 21 44.27	6.459
1180	0 22 10.08	6.445	0 22 35.83	6.431	0 23 1.52	6.416	0 23 27.15	6.401	0 23 52.72	6.386
1200	0 24 18.23	6.371	0 24 43.68	6.355	0 25 9.07	6.340	0 25 34.40	6.324	0 25 59.66	6.309
1220	0 26 24.87	6.293	0 26 50.00	6.277	0 27 15.07	6.260	0 27 40.08	6.244	0 28 5.02	6.227
1240	0 28 29.89	6.210	0 28 54.69	6.193	0 29 19.43	6.176	0 29 44.10	6.158	0 30 8.69	6.141
1260	0 30 33.22	6.123	0 30 57.68	6.105	0 31 22.06	6.087	0 31 46.37	6.069	0 32 10.61	6.051
1280	0 32 34.77	6.033	0 32 58.86	6.014	0 33 22.88	5.995	0 33 46.82	5.976	0 34 10.69	5.957
1300	0 34 34.47	5.938	0 34 58.18	5.919	0 35 21.82	5.899	0 35 45.37	5.879	0 36 8.84	5.859
1320	0 36 32.24	5.839	0 36 55.55	5.819	0 37 18.79	5.799	0 37 41.94	5.778	0 38 5.01	5.758
1340	0 38 28.00	5.737	0 38 50.90	5.716	0 39 13.72	5.695	0 39 36.46	5.674	0 39 59.11	5.653
1360	0 40 21.67	5.632	0 40 44.15	5.610	0 41 6.54	5.588	0 41 28.85	5.566	0 41 51.07	5.544
1380	0 42 13.20	5.522	0 42 35.24	5.500	0 42 57.19	5.477	0 43 19.06	5.455	0 43 40.83	5.432
1400	0 44 2.51	5.410	0 44 24.10	5.387	0 44 45.60	5.364	0 45 7.00	5.340	0 45 28.32	5.317
1420	0 45 49.54	5.294	0 46 10.66	5.271	0 46 31.70	5.247	0 46 52.63	5.223	0 47 13.48	5.199
1440	0 47 34.22	5.175	0 47 54.87	5.151	0 48 15.43	5.127	0 48 35.88	5.103	0 48 56.24	5.078
1460	0 49 16.50	5.053	0 49 36.66	5.029	0 49 56.73	5.004	0 50 16.69	4.979	0 50 36.56	4.954
1480	0 50 56.32	4.929	0 51 15.99	4.904	0 51 35.55	4.879	0 51 55.01	4.853	0 52 14.37	4.828
1500	0 52 33.62	4.802	0 52 52.78	4.776	0 53 11.83	4.750	0 53 30.77	4.724	0 53 49.62	4.698
1520	0 54 8.36	4.672	0 54 26.99	4.646	0 54 45.52	4.620	0 55 3.94	4.593	0 55 22.26	4.567
1540	0 55 40.47	4.540	0 55 58.57	4.513	0 56 16.57	4.486	0 56 34.46	4.459	0 56 52.24	4.432
1560	0 57 9.92	4.405	0 57 27.48	4.378	0 57 44.94	4.351	0 58 2.28	4.324	0 58 19.52	4.296
1580	0 58 36.65	4.268	0 58 53.66	4.241	0 59 10.57	4.213	0 59 27.36	4.185	0 59 44.05	4.157
1600	1 0 0.62	4.129	1 0 17.08	4.101	1 0 33.42	4.073	1 0 49.66	4.045	1 1 5.78	4.017
1620	1 1 21.79	3.988	1 1 37.68	3.960	1 1 53.46	3.931	1 2 9.13	3.903	1 2 24.68	3.874
1640	1 2 40.12	3.845	1 2 55.44	3.816	1 3 10.64	3.788	1 3 25.73	3.759	1 3 40.71	3.730
1660	1 3 55.56	3.700	1 4 10.31	3.671	1 4 24.92	3.642	1 4 39.44	3.613	1 4 53.83	3.583
1680	1 5 8.10	3.554	1 5 22.25	3.524	1 5 36.29	3.495	1 5 50.21	3.465	1 6 4.00	3.436
1700	1 6 17.68	3.406	1 6 31.24	3.376	1 6 44.68	3.346	1 6 58.01	3.316	1 7 11.21	3.286
1720	1 7 24.29	3.256	1 7 37.25	3.225	1 7 50.09	3.195	1 8 2.80	3.165	1 8 15.40	3.135
1740	1 8 27.88	3.104	1 8 40.23	3.074	1 8 52.46	3.043	1 9 4.57	3.013	1 9 16.56	2.982
1760	1 9 28.42	2.952	1 9 40.17	2.921	1 9 51.79	2.890	1 10 3.28	2.859	1 10 14.65	2.828
1780	1 10 25.90	2.797	1 10 37.03	2.766	1 10 48.03	2.735	1 10 58.91	2.704	1 11 9.66	2.673
1800	1 11 20.29	2.642	1 11 30.79	2.611	1 11 41.17	2.580	1 11 51.43	2.548	1 12 1.56	2.517
1820	1 12 11.56	2.486	1 12 21.44	2.455	1 12 31.19	2.423	1 12 40.82	2.392	1 12 50.32	2.360
1840	1 12 59.69	2.329	1 13 8.94	2.297	1 13 18.06	2.265	1 13 27.06	2.233	1 13 35.92	2.202
1860	1 13 44.66	2.170	1 13 53.28	2.138	1 14 1.76	2.106	1 14 10.12	2.074	1 14 18.35	2.042
1880	1 14 26.46	2.011	1 14 34.43	1.979	1 14 42.28	1.947	1 14 50.00	1.915	1 14 57.59	1.883
1900	1 15 5.06	1.850	1 15 12.39	1.818	1 15 19.60	1.786	1 15 26.68	1.754	1 15 33.63	1.722
1920	1 15 40.45	1.690	1 15 47.14	1.657	1 15 53.70	1.625	1 16 0.13	1.593	1 16 6.44	1.561
1940	1 16 12.61	1.528	1 16 18.66	1.496	1 16 24.57	1.463	1 16 30.36	1.431	1 16 36.01	1.398
1960	1 16 41.54	1.366	1 16 46.94	1.333	1 16 52.20	1.301	1 16 57.34	1.268	1 17 2.35	1.236
1980	1 17 7.22	1.203	1 17 11.97	1.171	1 17 16.58	1.138	1 17 21.07	1.106	1 17 25.42	1.073
2000	1 17 29.65	1.040	1 17 33.74	1.007	1 17 37.70	0.975	1 17 41.53	0.942	1 17 45.23	0.910
2020	1 17 48.81	0.877	1 17 52.24	0.844	1 17 55.55	0.811	1 17 58.73	0.779	1 18 1.78	0.746
2040	1 18 4.69	0.713	1 18 7.48	0.680	1 18 10.13	0.648	1 18 12.65	0.615	1 18 15.04	0.582
2060	1 18 17.30	0.549	1 18 19.43	0.516	1 18 21.43	0.483	1 18 23.29	0.451	1 18 25.03	0.418
2080	1 18 26.63	0.385	1 18 28.10	0.352	1 18 29.44	0.319	1 18 30.65	0.286	1 18 31.73	0.254
2100	1 18 32.67	0.221	1 18 33.49	0.188	1 18 34.17	+0.155	1 18 34.72	+0.122	1 18 35.14	+0.089
2120	1 18 35.43	+0.056	1 18 35.59	+0.023	1 18 35.62	-0.009	1 18 35.51	-0.042	1 18 35.27	-0.075
2140	1 18 34.91	+0.108	1 18 34.41	-0.141	1 18 33.78	0.173	1 18 33.02	0.206	1 18 32.12	0.239
2160	1 18 31.10	0.272	1 18 29.94	0.305	1 18 28.65	0.338	1 18 27.24	0.370	1 18 25.69	0.403
2180	+1 18 24.01	-0.436	+1 18 22.20	-0.469	+1 18 20.25	-0.501	+1 18 18.18	-0.534	+1 18 15.98	-0.567

The principal term of the Latitude—Continued.

TABLE LXVII—Continued.

[The Argument of this table is the Fundamental Argument.]

Arg.	d. o	Daily Motion.	d. 4	Daily Motion.	d. 8	Daily Motion.	d. 12	Daily Motion.	d. 16	Daily Motion.
d.	° / ' "	"	° / ' "	"	° / ' "	"	° / ' "	"	° / ' "	"
2200	+1 18 13.64	-0.600	+1 18 11.18	-0.632	+1 18 8.58	-0.665	+1 18 5.86	-0.698	+1 18 3.00	-0.731
2220	1 18 0.01	0.763	1 17 56.89	0.796	1 17 53.64	0.828	1 17 50.26	0.861	1 17 46.75	0.893
2240	1 17 43.11	0.926	1 17 39.34	0.958	1 17 35.44	0.991	1 17 31.41	1.023	1 17 27.25	1.056
2260	1 17 22.96	1.088	1 17 18.54	1.121	1 17 13.99	1.153	1 17 9.31	1.186	1 17 4.50	1.218
2280	1 16 59.56	1.251	1 16 54.50	1.283	1 16 49.30	1.315	1 16 43.97	1.347	1 16 38.52	1.380
2300	1 16 32.93	1.412	1 16 27.22	1.444	1 16 21.38	1.476	1 16 15.41	1.508	1 16 9.31	1.540
2320	1 16 3.08	1.572	1 15 56.72	1.604	1 15 50.24	1.637	1 15 43.63	1.669	1 15 36.89	1.701
2340	1 15 30.02	1.732	1 15 23.03	1.764	1 15 15.90	1.796	1 15 8.65	1.828	1 15 1.28	1.860
2360	1 14 53.77	1.892	1 14 46.14	1.923	1 14 38.38	1.955	1 14 30.49	1.987	1 14 22.48	2.019
2380	1 14 14.34	2.050	1 14 6.08	2.082	1 13 57.69	2.113	1 13 49.17	2.145	1 13 40.53	2.176
2400	1 13 31.76	2.208	1 13 22.87	2.239	1 13 13.85	2.270	1 13 4.71	2.301	1 12 55.44	2.333
2420	1 12 46.04	2.364	1 12 36.52	2.395	1 12 26.88	2.426	1 12 17.11	2.457	1 12 7.22	2.488
2440	1 11 57.21	2.519	1 11 47.07	2.550	1 11 36.81	2.581	1 11 26.42	2.611	1 11 15.91	2.642
2460	1 11 5.28	2.673	1 10 54.53	2.704	1 10 43.65	2.734	1 10 32.65	2.765	1 10 21.53	2.795
2480	1 10 10.28	2.826	1 9 58.92	2.856	1 9 47.43	2.887	1 9 35.82	2.917	1 9 24.09	2.947
2500	1 9 12.24	2.977	1 9 0.27	3.008	1 8 48.18	3.038	1 8 35.97	3.068	1 8 23.64	3.098
2520	1 8 11.19	3.128	1 7 58.62	3.157	1 7 45.93	3.187	1 7 33.12	3.217	1 7 20.19	3.247
2540	1 7 7.14	3.276	1 6 53.98	3.306	1 6 40.70	3.335	1 6 27.30	3.365	1 6 13.76	3.394
2560	1 6 0.14	3.423	1 5 46.39	3.452	1 5 32.52	3.481	1 5 18.54	3.510	1 5 4.44	3.539
2580	1 4 50.22	3.568	1 4 35.89	3.597	1 4 21.44	3.626	1 4 6.88	3.665	1 3 52.20	3.683
2600	1 3 37.41	3.712	1 3 22.50	3.740	1 3 7.48	3.769	1 2 52.35	3.797	1 2 37.10	3.826
2620	1 2 21.74	3.854	1 2 6.27	3.882	1 1 50.68	3.910	1 1 34.99	3.938	1 1 19.18	3.966
2640	1 1 3.26	3.994	1 0 47.23	4.021	1 0 31.09	4.049	1 0 14.83	4.077	0 59 58.47	4.105
2660	0 59 42.00	4.132	0 59 25.42	4.159	0 59 8.72	4.186	0 58 51.92	4.213	0 58 35.02	4.240
2680	0 58 18.00	4.267	0 58 0.88	4.294	0 57 43.64	4.321	0 57 26.31	4.348	0 57 8.86	4.375
2700	0 56 51.31	4.401	0 56 33.65	4.428	0 56 15.89	4.454	0 55 58.02	4.480	0 55 40.05	4.506
2720	0 55 21.97	4.532	0 55 3.79	4.558	0 54 45.50	4.584	0 54 27.12	4.610	0 54 8.62	4.636
2740	0 53 50.03	4.661	0 53 31.33	4.687	0 53 12.54	4.712	0 52 53.64	4.738	0 52 34.64	4.764
2760	0 52 15.54	4.789	0 51 56.33	4.813	0 51 37.03	4.838	0 51 17.63	4.862	0 50 58.14	4.887
2780	0 50 38.54	4.911	0 50 18.84	4.936	0 49 59.05	4.960	0 49 39.16	4.984	0 49 19.18	5.008
2800	0 48 59.09	5.032	0 48 38.92	5.056	0 48 18.64	5.080	0 47 58.27	5.104	0 47 37.81	5.128
2820	0 47 17.25	5.151	0 46 56.60	5.174	0 46 35.86	5.197	0 46 15.02	5.220	0 45 54.09	5.243
2840	0 45 33.07	5.266	0 45 11.96	5.289	0 44 50.77	5.312	0 44 29.47	5.334	0 44 8.09	5.357
2860	0 43 46.62	5.379	0 43 25.06	5.401	0 43 3.41	5.423	0 42 41.68	5.445	0 42 19.86	5.466
2880	0 41 57.95	5.488	0 41 35.95	5.509	0 41 13.87	5.531	0 40 51.71	5.552	0 40 29.46	5.573
2900	0 40 7.12	5.594	0 39 44.70	5.614	0 39 22.20	5.634	0 38 59.62	5.655	0 38 36.96	5.676
2920	0 38 14.21	5.697	0 37 51.38	5.717	0 37 28.47	5.737	0 37 5.49	5.757	0 36 42.42	5.777
2940	0 36 19.28	5.796	0 35 56.05	5.816	0 35 32.76	5.835	0 35 9.38	5.854	0 34 45.93	5.873
2960	0 34 22.40	5.892	0 33 58.79	5.910	0 33 35.11	5.929	0 33 11.36	5.947	0 32 47.54	5.966
2980	0 32 23.64	5.984	0 31 59.67	6.002	0 31 35.63	6.019	0 31 11.52	6.037	0 30 47.33	6.054
3000	0 30 23.08	6.072	0 29 58.76	6.089	0 29 34.37	6.106	0 29 9.92	6.123	0 28 45.39	6.140
3020	0 28 20.80	6.156	0 27 56.15	6.172	0 27 31.43	6.188	0 27 6.64	6.204	0 26 41.79	6.220
3040	0 26 16.88	6.236	0 25 51.90	6.252	0 25 26.87	6.267	0 25 1.77	6.282	0 24 36.61	6.297
3060	0 24 11.39	6.312	0 23 46.12	6.327	0 23 20.78	6.341	0 22 55.39	6.356	0 22 29.94	6.370
3080	0 22 4.43	6.384	0 21 38.87	6.397	0 21 13.26	6.411	0 20 47.59	6.424	0 20 21.86	6.438
3100	0 19 56.09	6.451	0 19 30.26	6.464	0 19 4.38	6.476	0 18 38.45	6.489	0 18 12.47	6.501
3120	0 17 46.44	6.513	0 17 20.36	6.525	0 16 54.24	6.537	0 16 28.07	6.549	0 16 1.85	6.560
3140	0 15 35.59	6.571	0 15 9.28	6.582	0 14 42.93	6.593	0 14 16.53	6.604	0 13 50.10	6.614
3160	0 13 23.62	6.625	0 12 57.10	6.635	0 12 30.54	6.645	0 12 3.95	6.654	0 11 37.31	6.664
3180	0 11 10.64	6.673	0 10 43.93	6.682	0 10 17.18	6.691	0 9 50.40	6.700	0 9 23.59	6.708
3200	0 8 56.74	6.716	0 8 29.86	6.724	0 8 2.95	6.732	0 7 36.01	6.740	0 7 9.03	6.747
3220	0 6 42.03	6.754	0 6 15.00	6.761	0 5 47.94	6.768	0 5 20.86	6.775	0 4 53.75	6.781
3240	0 4 26.62	6.787	0 3 59.46	6.793	0 3 32.27	6.799	0 3 5.07	6.804	0 2 37.84	6.810
3260	+0 2 10.59	6.815	+0 1 43.33	6.820	+0 1 16.04	6.824	+0 0 48.74	6.829	+0 0 21.42	6.833
3280	-0 0 5.92	-6.837	-0 0 33.27	-6.840	-0 1 0.64	-6.844	-0 1 28.02	-6.847	-0 1 55.41	-6.850

The principal term of the Latitude—Continued.

TABLE LXVII—Continued.

[The Argument of this table is the Fundamental Argument.]

Arg.	d. o	Daily Motion.	d. 4	Daily Motion.	d. 8	Daily Motion.	d. 12	Daily Motion.	d. 16	Daily Motion.
d	° / ' "	"	° / ' "	"	° / ' "	"	° / ' "	"	° / ' "	"
3300	—0 22.81	—6.853	—0 25.0.23	—6.856	—0 3 17.65	—6.858	—0 3 45.09	—6.860	—0 4 12.53	—6.862
3320	0 4 39.98	6.864	0 5 7.43	6.865	0 5 34.89	6.866	0 6 2.36	6.867	0 6 29.82	6.868
3340	0 6 57.29	6.868	0 7 24.76	6.868	0 7 52.23	6.868	0 8 19.71	6.868	0 8 47.18	6.868
3360	0 9 14.64	6.867	0 9 42.11	6.866	0 10 9.57	6.865	0 10 37.02	6.863	0 11 4.47	6.861
3380	0 11 31.91	6.859	0 11 59.34	6.857	0 12 26.76	6.855	0 12 54.18	6.852	0 13 21.58	6.849
3400	0 13 48.97	6.846	0 14 16.34	6.843	0 14 43.70	6.839	0 15 11.05	6.835	0 15 38.38	6.831
3420	0 16 5.69	6.826	0 16 32.99	6.822	0 17 0.26	6.817	0 17 27.52	6.812	0 17 54.75	6.806
3440	0 18 21.97	6.801	0 18 49.15	6.795	0 19 16.32	6.789	0 19 43.46	6.782	0 20 10.57	6.775
3460	0 20 37.65	6.768	0 21 4.71	6.761	0 21 31.74	6.753	0 21 58.73	6.746	0 22 25.70	6.738
3480	0 22 52.63	6.730	0 23 19.53	6.721	0 23 46.39	6.712	0 24 13.22	6.703	0 24 40.01	6.694
3500	0 25 6.77	6.684	0 25 33.48	6.674	0 26 0.16	6.664	0 26 26.79	6.654	0 26 53.38	6.643
3520	0 27 19.93	6.632	0 27 46.44	6.621	0 28 12.90	6.610	0 28 39.31	6.598	0 29 5.67	6.586
3540	0 29 31.99	6.574	0 29 58.26	6.561	0 30 24.48	6.548	0 30 50.64	6.535	0 31 16.75	6.522
3560	0 31 42.81	6.509	0 32 8.82	6.495	0 32 34.76	6.481	0 33 0.66	6.466	0 33 26.49	6.451
3580	0 33 52.26	6.436	0 34 17.97	6.421	0 34 43.63	6.406	0 35 9.22	6.390	0 35 34.74	6.374
3600	0 36 0.20	6.358	0 36 25.60	6.341	0 36 50.93	6.324	0 37 16.19	6.307	0 37 41.38	6.290
3620	0 38 6.50	6.272	0 38 31.55	6.254	0 38 56.53	6.236	0 39 21.44	6.218	0 39 46.27	6.199
3640	0 40 11.03	6.180	0 40 35.71	6.161	0 41 0.31	6.142	0 41 24.83	6.122	0 41 49.28	6.102
3660	0 42 13.64	6.081	0 42 37.92	6.061	0 43 2.12	6.040	0 43 26.24	6.019	0 43 50.26	5.997
3680	0 44 14.21	5.976	0 44 38.06	5.954	0 45 1.83	5.932	0 45 25.51	5.909	0 45 49.10	5.886
3700	0 46 12.59	5.863	0 46 36.00	5.840	0 46 59.30	5.816	0 47 22.52	5.792	0 47 45.64	5.768
3720	0 48 8.66	5.744	0 48 31.58	5.719	0 48 54.41	5.694	0 49 17.13	5.669	0 49 39.76	5.644
3740	0 50 2.28	5.618	0 50 24.70	5.592	0 50 47.01	5.566	0 51 9.22	5.540	0 51 31.31	5.513
3760	0 51 53.32	5.486	0 52 15.20	5.459	0 52 36.98	5.431	0 52 58.65	5.403	0 53 20.20	5.375
3780	0 53 41.64	5.347	0 54 2.97	5.319	0 54 24.19	5.290	0 54 45.28	5.261	0 55 6.26	5.231
3800	0 55 27.13	5.202	0 55 47.87	5.172	0 56 8.50	5.142	0 56 29.00	5.112	0 56 49.39	5.081
3820	0 57 9.65	5.050	0 57 29.78	5.019	0 57 49.80	4.988	0 58 9.68	4.957	0 58 29.44	4.925
3840	0 58 49.07	4.893	0 59 8.58	4.860	0 59 27.95	4.828	0 59 47.19	4.795	1 0 6.30	4.762
3860	1 0 25.28	4.729	1 0 44.13	4.695	1 1 2.84	4.661	1 1 21.41	4.627	1 1 39.85	4.593
3880	1 1 58.15	4.559	1 2 16.32	4.524	1 2 34.34	4.489	1 2 52.22	4.454	1 3 9.97	4.419
3900	1 3 27.57	4.383	1 3 45.03	4.348	1 4 2.74	4.312	1 4 19.52	4.276	1 4 36.54	4.239
3920	1 4 53.42	4.202	1 5 10.16	4.165	1 5 26.74	4.128	1 5 43.18	4.091	1 5 59.46	4.054
3940	1 6 15.60	4.016	1 6 31.58	3.978	1 6 47.41	3.940	1 7 3.09	3.902	1 7 18.62	3.863
3960	1 7 33.99	3.824	1 7 49.20	3.785	1 8 4.26	3.746	1 8 19.16	3.706	1 8 33.90	3.667
3980	1 8 48.49	3.627	1 9 2.91	3.587	1 9 17.17	3.547	1 9 31.28	3.507	1 9 45.22	3.466
4000	1 9 59.00	3.425	1 10 12.61	3.384	1 10 26.06	3.343	1 10 39.35	3.302	1 10 52.47	3.261
4020	1 11 5.43	3.219	1 11 18.22	3.177	1 11 30.84	3.135	1 11 43.29	3.093	1 11 55.57	3.050
4040	1 12 7.69	3.008	1 12 19.63	2.965	1 12 31.41	2.923	1 12 43.01	2.880	1 12 54.44	2.837
4060	1 13 5.69	2.793	1 13 16.78	2.750	1 13 27.69	2.706	1 13 38.42	2.662	1 13 48.98	2.618
4080	1 13 59.36	2.574	1 14 9.57	2.530	1 14 19.60	2.486	1 14 29.45	2.441	1 14 39.12	2.397
4100	1 14 48.62	2.352	1 14 57.93	2.307	1 15 7.07	2.262	1 15 16.03	2.217	1 15 24.80	2.172
4120	1 15 33.40	2.127	1 15 41.81	2.081	1 15 50.04	2.036	1 15 58.09	1.990	1 16 5.95	1.944
4140	1 16 13.63	1.898	1 16 21.13	1.852	1 16 28.44	1.806	1 16 35.57	1.760	1 16 42.51	1.713
4160	1 16 49.27	1.667	1 16 55.84	1.620	1 17 2.22	1.574	1 17 8.42	1.527	1 17 14.43	1.480
4180	1 17 20.25	1.433	1 17 25.89	1.386	1 17 31.33	1.339	1 17 36.59	1.292	1 17 41.66	1.244
4200	1 17 46.54	1.197	1 17 51.23	1.150	1 17 55.74	1.103	1 18 0.05	1.055	1 18 4.17	1.008
4220	1 18 8.10	0.960	1 18 11.84	0.912	1 18 15.39	0.864	1 18 18.75	0.816	1 18 21.91	0.768
4240	1 18 24.89	0.721	1 18 27.67	0.673	1 18 30.27	0.625	1 18 32.66	0.577	1 18 34.87	0.529
4260	1 18 36.88	0.480	1 18 38.71	0.432	1 18 40.34	0.384	1 18 41.78	0.336	1 18 43.02	0.288
4280	1 18 44.07	—0.240	1 18 44.93	—0.191	1 18 45.60	—0.143	1 18 46.07	—0.095	1 18 46.35	—0.046
4300	1 18 46.44	+0.002	1 18 46.33	+0.050	1 18 46.03	+0.098	1 18 45.54	+0.147	1 18 44.85	+0.195
4320	1 18 43.97	0.244	1 18 42.90	0.292	1 18 41.64	0.340	1 18 40.18	0.388	1 18 38.53	0.437
4340	—1 18 36.68	+0.485	—1 18 34.65	+0.533	—1 18 32.42	+0.581	—1 18 29.99	+0.629	—1 18 27.38	+0.677

Supplementary Table for obtaining the Orbit Longitude.

TABLE LXVIII.

Year.	Long. of the Ascending Node.			Argument = Elliptic Longitude. — Long. of the Ascending Node.				Correction to be added to the Elliptic Longitude.		Argument = Elliptic Longitude — Long. of the Ascending Node.			
	°	'	"	°	'	"	°	Value for 1850.	Secular Variation.	°	'	"	°
1600	96	23.2	+12.2	0	90	180	270	0.00	0.00	90	180	270	360
1620	96	35.4	12.3	1	89	181	269	+ 0.94—	94	91	179	271.	359
1640	96	47.7	12.3	2	88	182	268	1.89	95	92	178	272	358
1660	96	59.9	12.2	3	87	183	267	2.82	93	93	177	273	357
1680	97	12.1	12.2	4	86	184	266	3.76	94	94	176	274	356
1700	97	24.3	12.2	5	85	185	265	4.69	93	95	175	275	355
1720	97	36.5	12.3	6	84	186	264	5.62	92	96	174	276	354
1740	97	48.8	12.2	7	83	187	263	6.54	91	97	173	277	353
1760	98	1.0	12.2	8	82	188	262	7.45	90	98	172	278	352
1780	98	13.2	12.3	9	81	189	261	8.35	89	99	171	279	351
1800	98	25.5	12.2	10	80	190	260	9.24	88	100	170	280	350
1820	98	37.7	12.2	11	79	191	259	10.12	87	101	169	281	349
1840	98	49.9	12.3	12	78	192	258	10.99	86	102	168	282	348
1860	99	2.2	12.2	13	77	193	257	11.85	84	103	167	283	347
1880	99	14.4	12.3	14	76	194	256	12.69	82	104	166	284	346
1900	99	26.7	12.2	15	75	195	255	13.51	81	105	165	285	345
1920	99	38.9	12.3	16	74	196	254	14.32	79	106	164	286	344
1940	99	51.2	12.2	17	73	197	253	15.11	78	107	163	287	343
1960	100	3.4	12.3	18	72	198	252	15.89	75	108	162	288	342
1980	100	15.7	+12.2	19	71	199	251	16.64	73	109	161	289	341
2000	100	27.9		20	70	200	250	17.37	71	110	160	290	340
				21	69	201	249	18.08	69	111	159	291	339
				22	68	202	248	18.77	67	112	158	292	338
				23	67	203	247	19.44	64	113	157	293	337
				24	66	204	246	20.08	62	114	156	294	336
				25	65	205	245	20.70	60	115	155	295	335
				26	64	206	244	21.30	56	116	154	296	334
				27	63	207	243	21.86	54	117	153	297	333
				28	62	208	242	22.40	52	118	152	298	332
				29	61	209	241	22.92	48	119	151	299	331
				30	60	210	240	23.40	46	120	150	300	330
				31	59	211	239	23.86	43	121	149	301	329
				32	58	212	238	24.29	40	122	148	302	328
				33	57	213	237	24.69	37	123	147	303	327
				34	56	214	236	25.06	34	124	146	304	326
				35	55	215	235	25.40	30	125	145	305	325
				36	54	216	234	25.70	28	126	144	306	324
				37	53	217	233	25.98	24	127	143	307	323
				38	52	218	232	26.22	21	128	142	308	322
				39	51	219	231	26.43	18	129	141	309	321
				40	50	220	230	26.61	15	130	140	310	320
				41	49	221	229	26.76	12	131	139	311	319
				42	48	222	228	26.88	8	132	138	312	318
				43	47	223	227	26.96	5	133	137	313	317
				44	46	224	226	27.01	1	134	136	314	316
				45	45	225	225	+27.02—	—0.23+	135	135	315	315

The signs in this table must be read on the same side as the argument.



TABLES
OF
SATURN,

CONSTRUCTED IN ACCORDANCE WITH THE METHODS OF HANSEN,

AND PREPARED FOR USE IN THE OFFICE OF THE AMERICAN EPHEMERIS
AND NAUTICAL ALMANAC,

BY

GEORGE WILLIAM HILL,
Assistant American Ephemeris.

INTRODUCTION.

DISCUSSION OF THE OBSERVATIONS OF SATURN WITH RESULTING VALUES FOR THE ELEMENTS OF THE ORBIT AND THE MASSES OF JUPITER AND URANUS.

The material employed in this discussion was derived from the published work of the following eleven observatories; the intervals of time covered by it, together with the number of observations in right ascension and declination, are added :

		R. A.	Dec.
Greenwich	1751-1888	1915	1953
Palermo	1791-1812	58	48
Paris	1801-1883	1035	1015
Königsberg	1814-1847	198	185
Cambridge	1829-1847	410	307
Capetown	1834-1860	78	22
Edinburg	1835-1844	200	137
Berlin	1838-1854	94	94
Oxford	1840-1876	126	124
Washington	1845-1884	438	350
Brussels	1855-1863	33	26
Whole number of observations,		4585	4261

Only those observations were included for which the planet culminated between 16^h and 8^h of local time. An exception, however, was made in the case of the Greenwich observations in the time of BRADLEY, when all were included.

The right ascensions were reduced to the standard of Prof. NEWCOMB's *Right Ascensions of the Equatorial Fundamental Stars* (*Washington Observations*, 1870, Appendix III), and the declinations to Prof. BOSS's standard.

In order to the combination of this material at least an approximate estimate of the relative degrees of precision of the several portions of it must be formed. The following determinations of probable error of a single observation of Jupiter were made in the case of four observatories at the epochs of the stated intervals:

Greenwich.

	R. A.	Dec.
	s.	"
1750-1761 Oct. 16	± 0.104	± 1.00
1761 Oct. 26 1765	± 0.159	± 1.40
1766-1811	± 0.084	± 1.06
1812-1825	± 0.101	± 0.90
1826-1835	± 0.085	± 0.59
1836	± 0.076	± 0.92
1878-1887	± 0.052	± 0.76

Palermo.

1792-1809	s. ± 0.103	" ± 1.15
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Paris.

1801-1827	s. ± 0.095	" ± 1.17
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Königsberg.

1814-1825	s. ± 0.104	" ± 0.95
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These probable errors are larger than those which correspond to a fixed star. They show that one observation of right ascension now made at Greenwich is worth as much as four made in the time of BRADLEY. The advance in precision of the declinations seems not to have been as great. We note that the declinations are considerably more precise than the right ascensions. Although these determinations have been made for Jupiter, it may be assumed that the probable errors for Saturn bear the same ratio to each other.

Provisional tables having been constructed from the theory in *Astronomical Papers*, Vol. IV, the observations of the interval 1751-1829 were compared directly with isolated places or an ephemeris computed from these tables. For the interval 1830-1888, however, it has been preferred to compare the single observations with the ephemeris contained in the *Berliner Jahrbuch* (1830-1833) or the *Nautical Almanac* (1834-1888), and thus combine the material into normals, three being formed about each opposition. The provisional theory was then compared with these normals. One equation of condition has, however, been considered sufficient for each opposition, the absolute term of which is taken to be the average of the three residuals.

These equations involve eight unknown quantities, the notation of which is explained as follows:

- x_1 = the correction of the mean longitude for 1850.0,
- x_2 = the correction of the mean motion for a century,
- x_3 = the correction of the eccentricity expressed in seconds of arc,
- x_4 = the correction of the longitude of perihelion multiplied by the eccentricity,

x_5 = the correction of the inclination,

x_6 = the correction of the longitude of ascending node multiplied by the sine of the inclination,

$1 + \frac{x_7}{1000''}$ = the factor by which the mass of Jupiter $\frac{1}{047.879}$ must be multiplied,

$1 + \frac{x_8}{10''}$ = the factor by which the mass of Uranus $\frac{1}{22640}$ must be multiplied.

The equations which have been formed, together with the dates to which they correspond, are given below. It is to be noted that the absolute terms of those which come from the right ascensions are $\Delta\alpha \cos \delta$, and the absolute terms of those which come from the declinations are $\Delta\delta$. For brevity the sign of equality and the zero which constitutes the right member of the equation are omitted. The number of observations on which each equation depends, together with the weight allowed to the latter in the discussion, will be given with the statement of the final residuals.

Equations from the Right Ascensions.

	x_1 .	x_2 .	x_3 .	x_4 .	x_5 .	x_6 .	x_7 .	x_8 .	"
1751 May 28	0.988	-0.974	+0.658	+1.912	+0.128	+0.146	-2.182	-2.233	-2.57
1752 Mar. 10	0.886	0.867	0.210	1.815	0.040	0.062	1.957	2.285	-2.22
1752 June 29	0.989	0.964	0.262	2.026	0.106	0.105	2.167	2.526	-0.89
1752 Aug. 18	0.926	0.901	+0.253	1.900	+0.060	+0.114	2.021	2.363	-1.48
1753 Apr. 9	0.926	0.896	-0.177	1.912	-0.001	-0.003	2.049	2.519	-4.13
1753 July 3	0.994	0.959	0.169	2.060	+0.008	+0.026	2.184	2.690	+0.24
1753 Aug. 26	0.930	0.896	0.148	1.927	+0.012	+0.040	2.036	2.509	+1.85
1754 July 27	0.975	0.931	0.513	1.969	-0.007	-0.056	2.154	2.611	-0.41
1754 Oct. 2	0.900	0.857	0.534	1.816	-0.003	0.041	1.976	2.406	+0.88
1755 July 20	0.998	0.942	0.996	1.844	+0.011	0.156	2.235	2.442	+0.19
1756 Aug. 4	0.973	0.930	1.334	1.617	0.064	0.226	2.251	2.042	-0.68
1756 Oct. 8	0.929	0.866	1.238	1.518	0.062	0.193	2.076	1.910	-1.06
1757 Aug. 9	0.997	0.921	1.627	1.309	0.140	0.273	2.285	1.474	+1.95
1757 Nov. 5	0.909	0.838	1.495	1.190	0.125	0.218	2.055	1.196	+3.06
1758 Sept. 1	1.000	0.913	1.846	0.962	0.227	0.277	2.321	0.786	+0.22
1758 Nov. 6	0.921	0.839	1.702	0.756	0.213	0.240	2.102	-0.728	+0.88
1759 Aug. 15	1.001	0.904	1.982	0.542	0.310	0.255	2.396	+0.032	+1.06
1759 Nov. 29	0.911	-0.820	-1.806	+0.514	+0.287	-0.208	-2.114	+0.007	-1.01

Equations from the Right Ascensions—Continued.

		$x_1.$	$x_2.$	$x_3.$	$x_4.$	$x_5.$	$x_6.$	$x_7.$	$x_8.$	"
1760	Sept. 5	1.024	-0.914	-2.062	+0.121	+0.379	-0.191	-2.503	+0.858	+0.07
1760	Dec. 17	0.914	0.814	1.847	+0.121	0.346	0.148	2.174	0.754	-0.14
1761	Aug. 15	1.013	0.895	1.971	-0.332	0.400	0.108	2.589	1.660	+1.68
1761	Oct. 2	1.050	0.926	2.051	0.311	0.418	0.100	2.634	1.675	+2.64
1761	Dec. 7	0.972	0.856	1.909	0.269	0.393	0.078	2.387	1.515	+0.25
1762	Oct. 17	1.082	0.943	1.942	0.775	0.417	-0.002	2.808	2.453	-3.40
1763	Nov. 3	1.122	0.967	1.725	1.244	0.372	+0.087	3.010	3.160	+0.13
1764	Dec. 12	1.135	0.965	1.400	1.609	0.294	0.155	3.067	3.541	-1.31
1765	Nov. 21	1.208	1.016	0.993	2.029	0.189	0.162	3.372	4.001	+0.75
1766	Dec. 8	1.239	1.029	-0.483	2.271	0.088	0.125	3.520	4.075	+0.67
1767	Dec. 20	1.254	1.029	+0.083	2.364	+0.014	+0.037	3.635	3.887	+0.62
1769	Jan. 3	1.248	1.010	0.643	2.287	-0.009	-0.075	3.696	3.410	-0.23
1770	Jan. 19	1.222	0.977	1.144	2.061	+0.023	0.180	3.701	2.742	-1.82
1771	Feb. 2	1.182	0.933	1.549	1.700	0.099	0.256	3.676	1.930	-0.12
1772	Feb. 14	1.137	0.885	1.836	1.267	0.196	0.284	3.626	1.075	-3.65
1773	Feb. 27	1.092	0.839	2.005	0.804	0.291	0.265	3.570	+0.210	+0.03
1774	Mar. 14	1.054	0.799	2.072	-0.388	0.369	0.204	3.510	-0.586	+2.17
1775	Mar. 30	1.024	0.765	2.045	+0.123	0.413	0.119	3.446	1.320	-0.08
1776	Apr. 5	1.002	0.739	1.937	0.559	0.349	-0.023	3.388	1.972	-0.99
1777	Apr. 18	0.988	0.718	1.757	0.958	0.391	+0.057	3.326	2.507	-1.71
1778	May 2	0.982	0.704	1.512	1.319	0.332	0.123	3.259	2.911	-2.55
1779	May 10	0.981	0.693	1.204	1.627	0.252	0.156	3.200	3.170	+5.69
1780	May 25	0.984	0.685	0.849	1.868	0.166	0.157	3.144	3.250	+0.09
1782	June 18	0.992	0.670	+0.041	2.099	+0.026	+0.059	3.070	2.871	+1.90
1783	July 28	0.982	0.652	-0.369	2.050	-0.003	-0.014	2.984	2.394	+2.71
1784	July 13	0.996	0.652	0.801	1.955	-0.002	0.120	3.016	1.834	+6.09
1785	July 24	0.997	0.642	1.174	1.739	+0.036	0.201	2.982	1.167	+0.89
1786	Aug. 6	0.997	-0.632	-1.495	+1.452	+0.104	-0.258	-2.956	-0.449	+4.45

Equations from the Right Ascensions—Continued.

	x_1 .	x_2 .	x_3 .	x_4 .	x_5 .	x_6 .	x_7 .	x_8 .	"
1787 Aug. 18	1.000	-0.624	-1.752	+1.102	+0.188	-0.283	-2.950	+0.204	+6.38
1788 Aug. 30	1.007	0.618	1.936	0.703	0.276	0.269	2.974	0.954	+1.54
1789 Sept. 11	1.021	0.616	2.045	+0.270	0.353	0.221	3.025	1.565	+0.30
1790 Sept. 22	1.042	0.618	2.069	-0.191	0.405	0.143	3.106	2.102	+0.08
1791 Oct. 8	1.072	0.624	2.007	0.656	0.423	-0.048	3.216	2.540	-0.28
1792 Oct. 24	1.108	0.634	1.848	1.114	0.398	+0.049	3.342	2.861	+0.48
1793 Nov. 7	1.150	0.646	1.584	1.553	0.333	0.125	3.481	3.066	+0.88
1794 Nov. 14	1.194	0.658	1.205	1.945	0.236	0.160	3.626	3.128	+1.17
1795 Dec. 1	1.234	0.667	0.649	2.262	0.108	0.121	3.778	3.014	-5.35
1796 Dec. 24	1.249	0.662	-0.196	2.381	+0.044	+0.086	3.779	2.755	-0.97
1797 Dec. 30	1.255	0.652	+0.381	2.365	-0.006	-0.024	3.789	2.357	+0.74
1799 Jan. 13	1.235	0.629	0.920	2.173	+0.002	0.138	3.722	1.904	-3.49
1800 Jan. 26	1.199	0.599	1.373	1.850	0.061	0.230	3.616	1.313	+2.55
1801 Feb. 28	1.150	0.562	1.697	1.439	0.151	0.269	3.467	0.815	-1.83
1802 Feb. 27	1.109	0.531	1.938	0.979	0.252	0.277	3.400	+0.352	+1.23
1803 Mar. 19	1.068	0.499	2.050	0.517	0.339	0.231	3.301	-0.019	-3.32
1804 Mar. 26	1.035	0.474	2.068	-0.064	0.398	0.157	3.201	0.309	-2.23
1805 Apr. 6	1.010	0.452	1.998	+0.368	0.393	-0.062	3.068	0.529	-2.91
1806 Apr. 24	0.991	0.433	1.845	0.764	0.408	+0.024	2.924	0.700	-1.59
1807 May 1	0.986	0.421	1.634	1.129	0.360	0.098	2.785	0.874	+0.90
1808 May 12	0.985	0.410	1.356	1.440	0.288	0.147	2.645	1.072	-2.11
1809 May 20	0.987	0.401	1.018	1.705	0.202	0.161	2.520	1.318	-1.78
1810 June 5	0.991	0.392	0.829	1.888	0.118	0.141	2.421	1.613	-0.19
1811 June 14	0.995	0.384	+0.225	2.007	0.046	0.085	2.315	1.961	-2.22
1812 June 29	0.999	0.375	-0.198	2.023	+0.003	+0.008	2.229	2.333	-2.96
1813 July 9	0.999	0.364	0.563	1.960	-0.009	-0.084	2.152	2.701	-4.62
1814 July 21	0.999	0.354	1.010	1.797	+0.016	0.170	2.089	3.027	-0.39
1815 Aug. 2	0.998	-0.343	-1.356	+1.560	+0.073	-0.239	-2.034	-3.293	+0.73

Equations from the Right Ascensions—Continued.

		x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	"
1816	Aug. 16	0.998	-0.333	-1.641	+1.255	+0.152	-0.276	-2.001	-3.472	-3.85
1817	Aug. 27	1.002	0.324	1.861	0.908	0.240	0.280	1.996	3.546	-1.71
1818	Sept. 6	1.012	0.317	2.004	0.505	0.323	0.246	2.027	3.518	-0.86
1819	Sept. 20	1.028	0.311	2.068	+0.086	0.387	0.179	2.041	3.371	-2.42
1820	Oct. 3	1.053	0.308	2.047	-0.357	0.420	-0.089	2.219	3.124	-2.69
1821	Oct. 18	1.086	0.306	1.932	0.814	0.413	+0.009	2.412	2.759	-2.91
1822	Nov. 7	1.123	0.305	1.717	1.254	0.365	0.097	2.612	2.276	-0.99
1823	Nov. 13	1.169	0.305	1.392	1.681	0.280	0.150	2.871	1.669	+0.13
1824	Nov. 28	1.209	0.303	0.965	2.027	0.176	0.160	3.092	0.967	+0.24
1825	Dec. 11	1.240	0.298	-0.460	2.252	0.076	0.114	3.292	-0.190	+0.82
1827	Jan. 13	1.242	0.285	+0.100	2.316	+0.012	+0.034	3.412	+0.616	0.00
1828	Feb. 3	1.227	0.269	0.648	2.222	-0.006	-0.074	3.499	1.375	-0.12
1829	Feb. 17	1.201	0.251	1.127	1.991	+0.030	0.177	3.559	2.046	+0.41
1830	Mar. 5	1.160	0.230	1.530	1.639	0.108	0.246	3.574	2.577	-0.26
1831	Mar. 4	1.128	0.212	1.835	1.225	0.207	0.278	3.617	2.993	+0.83
1832	Mar. 22	1.082	0.192	1.993	0.773	0.301	0.251	3.577	3.178	+0.23
1833	Apr. 12	1.038	0.174	2.043	-0.309	0.372	0.186	3.520	3.221	-0.26
1834	Apr. 15	1.017	0.160	2.031	+0.139	0.415	0.105	3.510	3.163	+1.61
1835	May 1	0.994	0.146	1.919	0.563	0.417	-0.012	3.444	2.933	+0.65
1836	May 11	0.982	0.134	1.741	0.960	0.385	+0.070	3.383	2.586	-1.13
1837	May 17	0.980	0.124	1.498	1.315	0.324	0.131	3.329	2.122	-0.29
1838	May 21	0.981	0.114	1.188	1.625	0.242	0.160	3.222	1.549	-0.29
1839	June 12	0.982	0.104	0.836	1.851	0.157	0.159	3.098	0.932	+0.46
1840	June 21	0.987	0.094	0.400	2.013	0.078	0.118	2.990	+0.204	-0.16
1841	June 23	0.994	0.085	+0.008	2.086	+0.018	+0.044	2.903	-0.499	-0.31
1842	July 20	0.992	0.074	-0.405	2.043	-0.006	-0.034	2.775	1.116	-0.59
1843	Aug. 9	0.987	0.063	0.794	1.910	+0.002	0.120	2.657	1.621	-0.87
1844	Aug. 10	0.993	-0.054	-1.185	+1.703	+0.044	-0.205	-2.582	-2.003	-1.43

Equations from the Right Ascensions—Continued.

		x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	"
1845	Aug. 21	0.994	-0.043	-1.502	+1.414	+0.114	-0.259	-2.511	-2.194	-0.36
1846	Sept. 5	0.996	0.033	1.753	1.065	0.199	0.278	2.460	2.191	-0.13
1847	Sept. 15	1.005	0.023	1.936	0.665	0.286	0.262	2.456	1.987	-0.35
1848	Sept. 23	1.021	0.013	2.044	+0.230	0.362	0.210	2.497	1.606	-0.74
1849	Oct. 16	1.037	-0.002	2.055	-0.215	0.408	0.126	2.557	1.059	-0.66
1850	Oct. 14	1.074	+0.008	2.000	0.684	0.421	-0.035	2.701	-0.334	-1.02
1851	Nov. 5	1.106	0.020	1.827	1.139	0.391	+0.061	2.834	+0.471	-0.09
1852	Nov. 17	1.150	0.033	1.562	1.570	0.322	0.133	3.020	1.384	-0.32
1853	Nov. 9	1.197	0.046	1.169	1.967	0.218	0.156	3.225	2.326	-0.04
1854	Nov. 30	1.233	0.061	0.695	2.236	0.115	0.137	3.391	3.228	+0.62
1856	Jan. 3	1.245	0.075	-0.163	2.355	+0.035	+0.075	3.471	3.803	+0.44
1857	Jan. 29	1.232	0.087	+0.391	2.307	-0.005	-0.024	3.475	4.240	+0.06
1858	Jan. 30	1.227	0.099	0.937	2.136	+0.008	0.144	3.514	4.561	+0.87
1859	Feb. 22	1.184	0.108	1.369	1.804	0.070	0.226	3.419	4.529	+0.61
1860	Mar. 4	1.142	0.116	1.708	1.389	0.163	0.272	3.347	4.347	+0.35
1861	Mar. 27	1.088	0.122	1.909	0.930	0.260	0.262	3.233	3.960	-0.14
1862	Apr. 16	1.040	0.128	2.003	0.475	0.341	0.212	3.137	3.494	-0.15
1863	Apr. 15	1.023	0.136	2.046	-0.030	0.400	0.142	3.120	3.034	-0.42
1864	Apr. 28	0.999	0.143	1.973	+0.393	0.419	-0.051	3.009	2.487	+0.07
1865	May 6	0.987	0.152	1.832	0.803	0.403	+0.036	2.887	1.940	+0.34
1866	May 15	0.982	0.161	1.619	1.139	0.353	0.108	2.735	1.388	+0.26
1867	May 20	0.985	0.171	1.340	1.450	0.278	0.151	2.574	0.860	-0.07
1868	June 13	0.980	0.181	1.003	1.688	0.194	0.166	2.371	+0.450	-0.01
1869	June 23	0.986	0.192	0.623	1.839	0.110	0.140	2.201	-0.016	-0.36
1870	July 1	0.994	0.204	+0.210	1.973	0.041	0.081	2.036	0.321	+0.15
1871	July 27	0.986	0.213	-0.206	1.968	+0.002	+0.007	1.850	0.513	+0.33
1872	July 22	0.999	0.225	0.636	1.912	-0.007	-0.092	1.728	0.588	+0.43
1873	Aug. 1	0.999	+0.235	-1.027	+1.742	+0.022	-0.178	-1.574	-0.538	+0.29

Equations from the Right Ascensions—Continued.

		$x_1.$	$x_2.$	$x_3.$	$x_4.$	$x_5.$	$x_6.$	$x_7.$	$x_8.$	"
1874	Aug. 25	0.991	+0.244	-1.356	+1.499	+0.082	-0.237	-1.440	-0.373	+0.41
1875	Sept. 7	0.991	0.255	1.638	1.198	0.157	0.274	1.339	-0.018	-0.57
1876	Sept. 10	1.000	0.267	1.854	0.842	0.251	0.274	1.299	+0.234	+0.27
1877	Oct. 1	1.004	0.279	1.991	0.452	0.331	0.231	1.271	0.620	-0.51
1878	Oct. 3	1.028	0.296	2.057	+0.024	0.393	0.165	1.323	1.074	-1.08
1879	Oct. 22	1.049	0.313	2.032	-0.390	0.420	-0.072	1.405	1.546	-0.85
1880	Nov. 6	1.080	0.333	1.954	0.839	0.408	+0.025	1.558	2.007	-0.50
1881	Nov. 20	1.119	0.357	1.689	1.272	0.355	0.109	1.770	2.489	-1.31
1882	Nov. 26	1.168	0.384	1.366	1.683	0.267	0.157	2.034	2.983	-1.29
1883	Dec. 4	1.212	0.411	0.929	2.029	0.161	0.156	2.301	3.400	-1.28
1884	Dec. 19	1.240	0.434	-0.432	2.242	0.065	0.105	2.529	3.738	-1.51
1886	Jan. 1	1.251	0.450	+0.158	2.302	+0.003	+0.009	2.722	3.949	-1.26
1887	Jan. 31	1.229	0.456	0.694	2.187	-0.005	-0.094	2.827	3.965	-1.32
1888	Feb. 3	1.209	+0.460	+1.196	-1.949	+0.039	-0.202	-2.962	+3.952	-1.03

Equations from the Declinations.

		$x_1.$	$x_2.$	$x_3.$	$x_4.$	$x_5.$	$x_6.$	$x_7.$	$x_8.$	"
1751	May 28	-0.175	+0.172	-0.119	-0.338	+0.723	+0.822	+0.437	+0.522	-1.08
1752	Mar. 10	0.066	0.064	0.020	0.134	0.538	0.837	0.196	0.279	-2.03
1752	June 29	0.108	0.106	0.030	0.222	0.542	0.961	0.296	0.401	-1.98
1752	Aug. 18	-0.115	+0.112	0.029	-0.236	0.485	0.916	0.307	0.412	-0.83
1753	Apr. 9	+0.002	-0.002	-0.003	+0.004	0.370	0.969	0.053	0.107	-1.96
1753	July 3	-0.024	+0.023	+0.004	-0.050	0.349	1.053	0.116	0.184	-0.11
1753	Aug. 26	-0.037	+0.036	+0.009	-0.077	0.302	0.996	+0.142	+0.211	-1.27
1754	July 27	+0.051	-0.048	-0.025	+0.103	0.126	1.079	-0.048	-0.032	-1.86
1754	Oct. 2	0.036	0.034	0.017	0.074	+0.082	1.004	0.018	0.003	+1.88
1755	July 20	0.141	0.134	0.131	0.267	-0.077	1.098	0.247	0.256	-2.69
1756	Aug. 4	0.215	0.201	0.286	0.351	0.295	1.046	0.420	0.363	-2.44
1756	Oct. 8	+0.184	-0.172	-0.242	+0.304	-0.310	+0.970	-0.449	-0.311	-2.04

Equations from the Declinations—Continued.

		x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	"
1757 Aug.	9	+0.286	-0.264	-0.465	+0.378	-0.489	+0.952	-0.591	-0.363	-1.42
1757 Nov.	5	0.232	0.214	0.377	0.311	0.489	0.848	0.466	0.267	-0.36
1758 Sept.	1	0.340	0.310	0.626	0.331	0.669	0.814	0.730	0.231	-0.60
1758 Nov.	6	0.302	0.275	0.556	0.301	0.647	0.731	0.636	-0.212	-1.31
1759 Aug.	15	0.389	0.352	0.771	0.213	0.797	0.655	0.881	+0.030	-0.79
1759 Nov.	29	0.342	0.308	0.678	0.196	0.764	0.554	0.749	0.011	+0.09
1760 Sept.	5	0.421	0.376	0.849	0.058	0.921	0.463	0.986	0.336	-0.33
1760 Dec.	17	0.371	0.330	0.750	+0.052	0.851	0.365	0.850	0.294	-1.40
1761 Aug.	15	0.421	0.372	0.819	-0.135	0.963	0.260	1.047	0.663	-0.04
1761 Oct.	2	0.437	0.386	0.856	0.123	1.004	0.240	1.066	0.662	-0.05
1761 Dec.	7	0.405	0.357	0.796	0.109	0.943	0.187	0.971	0.600	+0.08
1762 Oct.	17	0.434	0.379	0.783	0.305	1.038	+0.006	1.112	0.930	-0.20
1763 Nov.	3	0.406	0.350	0.633	0.440	1.025	-0.239	1.084	1.068	-4.00
1764 Dec.	12	0.360	0.306	0.447	0.509	0.925	0.489	0.992	1.053	-3.89
1765 Nov.	21	0.275	0.231	0.231	0.459	0.832	0.711	0.797	0.833	-1.07
1766 Dec.	8	0.170	0.141	-0.070	0.311	0.642	0.908	0.526	0.482	-0.79
1767 Dec.	20	+0.044	-0.036	+0.001	-0.083	0.405	1.046	-0.179	+0.064	-3.37
1769 Jan.	3	-0.084	+0.068	-0.044	+0.154	-0.136	1.111	+0.192	-0.295	+1.71
1770 Jan.	19	0.201	0.161	0.187	0.339	+0.138	1.098	0.550	0.510	-0.56
1771 Feb.	2	0.298	0.235	0.389	0.430	0.391	1.014	0.870	0.536	+0.88
1772 Feb.	14	0.369	0.287	0.593	0.414	0.606	0.876	1.123	0.388	-0.99
1773 Feb.	27	0.411	0.316	0.753	0.307	0.774	0.705	1.299	-0.106	-1.83
1774 Mar.	14	0.429	0.325	0.843	+0.143	0.907	0.500	1.396	+0.226	-0.59
1775 Mar.	30	0.427	0.319	0.854	-0.046	0.990	0.285	1.417	0.554	+1.11
1776 Apr.	5	0.339	0.250	0.657	0.185	1.031	-0.068	1.139	0.687	-3.47
1777 Apr.	18	0.375	0.272	0.669	0.358	1.031	+0.151	1.261	0.983	+1.35
1778 May	2	0.329	0.236	0.510	0.438	0.990	0.366	1.103	1.022	+1.62
1779 May	10	-0.271	+0.192	-0.336	-0.447	+0.911	+0.565	+0.904	+0.932	+0.13

Equations from the Declinations—Continued.

		x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	"
1780	May 25	-0.207	+0.144	-0.196	-0.391	+0.790	+0.749	+0.684	+0.744	-4.72
1782	June 18	-0.058	+0.039	0.004	-0.122	0.449	1.015	0.219	0.237	+1.79
1783	July 28	+0.013	-0.008	0.004	+0.027	0.223	1.075	+0.008	+0.037	-6.26
1784	July 13	0.108	0.071	0.087	0.212	+0.022	1.106	-0.277	-0.131	-3.20
1785	July 24	0.186	0.120	0.219	0.325	-0.195	1.077	0.507	0.155	-1.46
1786	Aug. 6	0.257	0.163	0.384	0.376	0.402	1.001	0.713	-0.060	-5.12
1787	Aug. 18	0.320	0.199	0.559	0.356	0.588	0.884	0.898	+0.105	-1.35
1788	Aug. 30	0.371	0.228	0.712	0.263	0.749	0.731	1.057	0.386	-0.80
1789	Sept. 11	0.410	0.247	0.821	+0.114	0.879	0.549	1.186	0.650	-1.37
1790	Sept. 22	0.434	0.257	0.863	-0.074	0.972	0.344	1.277	0.882	-3.80
1791	Oct. 8	0.440	0.256	0.826	0.263	1.029	+0.116	1.315	1.033	-0.95
1792	Oct. 24	0.425	0.243	0.712	0.422	1.038	-0.127	1.288	1.072	-0.83
1793	Nov. 7	0.385	0.216	0.535	0.516	0.995	0.373	1.182	0.988	-0.90
1794	Nov. 14	0.313	0.173	0.321	0.508	0.897	0.609	0.977	0.771	-1.86
1795	Dec. 1	0.181	0.098	0.109	0.327	0.739	0.829	0.582	0.383	-2.20
1796	Dec. 24	+0.108	-0.057	0.019	-0.205	0.509	0.993	-0.363	+0.168	-7.40
1797	Dec. 30	-0.028	+0.014	0.010	+0.052	-0.257	1.092	+0.043	-0.125	-0.35
1799	Jan. 13	0.153	0.078	0.114	0.269	+0.018	1.113	0.418	0.309	+0.70
1800	Jan. 26	0.260	0.130	0.297	0.402	0.281	1.059	0.742	0.361	+0.73
1801	Feb. 28	0.331	0.162	0.486	0.418	0.525	0.933	0.956	0.310	+0.07
1802	Feb. 27	0.394	0.189	0.686	0.352	0.710	0.780	1.170	0.196	+0.18
1803	Mar. 19	0.422	0.197	0.807	0.210	0.859	0.584	1.270	-0.056	+2.36
1804	Mar. 26	0.430	0.197	0.858	+0.032	0.960	0.379	1.304	+0.075	+3.39
1805	Apr. 6	0.391	0.175	0.773	-0.136	1.018	-0.162	1.169	0.160	+1.63
1806	Apr. 24	0.392	0.171	0.732	0.296	1.032	+0.062	1.150	0.242	+2.07
1807	May 1	0.351	0.150	0.585	0.397	1.012	0.276	0.994	0.283	+1.39
1808	May 12	0.299	0.125	0.415	0.434	0.949	0.485	0.814	0.302	+2.09
1809	May 20	-0.235	+0.096	-0.246	-0.404	+0.847	+0.674	+0.619	+0.293	+0.35

Equations from the Declinations—Continued.

		$x_1.$	$x_2.$	$x_3.$	$x_4.$	$x_5.$	$x_6.$	$x_7.$	$x_8.$	"
1810	June 5	-0.166	+0.066	-0.142	-0.315	+0.704	+0.841	+0.430	+0.252	-0.34
1811	June 14	0.087	0.034	0.022	0.175	0.532	0.972	0.230	0.155	-0.27
1812	June 29	-0.008	+0.003	0.000	-0.016	0.329	1.062	+0.046	+0.003	+0.13
1813	July 9	+0.076	-0.028	0.043	+0.148	+0.116	1.103	-0.133	-0.218	+0.02
1814	July 21	0.155	0.055	0.156	0.279	-0.104	1.095	0.293	0.479	-1.47
1815	Aug. 2	0.230	0.079	0.311	0.360	0.316	1.038	0.438	0.764	-1.18
1816	Aug. 16	0.294	0.098	0.472	0.376	0.514	0.937	0.561	1.025	+0.32
1817	Aug. 27	0.351	0.113	0.650	0.321	0.685	0.799	0.671	1.240	-2.19
1818	Sept. 6	0.395	0.124	0.782	0.202	0.827	0.630	0.765	1.368	-2.68
1819	Sept. 20	0.424	0.128	0.854	+0.041	0.937	0.433	0.819	1.382	-1.01
1820	Oct. 3	0.437	0.128	0.852	-0.142	1.010	+0.214	0.906	1.287	-1.40
1821	Oct. 18	0.431	0.122	0.770	0.318	1.040	-0.022	0.944	1.080	-1.58
1822	Nov. 7	0.403	0.109	0.620	0.446	1.018	0.270	0.932	0.801	-1.67
1823	Nov. 13	0.345	0.090	0.416	0.493	0.947	0.509	0.846	0.478	-1.93
1824	Nov. 28	0.262	0.066	0.214	0.439	0.811	0.737	0.676	-0.196	-1.26
1825	Dec. 11	0.152	0.037	-0.047	0.278	0.617	0.927	0.425	+0.010	-0.98
1827	Jan. 13	+0.040	-0.009	+0.003	-0.075	0.358	1.054	-0.129	+0.031	-0.75
1828	Feb. 3	-0.083	+0.018	-0.042	+0.150	-0.085	1.101	+0.214	-0.085	+1.11
1829	Feb. 17	0.198	0.041	0.183	0.330	+0.184	1.075	0.563	0.334	+0.09
1830	Mar. 5	0.292	0.058	0.381	0.415	0.429	0.980	0.876	0.652	+0.19
1831	Mar. 4	0.370	0.070	0.599	0.405	0.633	0.850	1.165	0.983	+0.62
1832	Mar. 22	0.408	0.073	0.750	0.297	0.798	0.665	1.333	1.220	+1.24
1833	Apr. 12	0.422	0.071	0.830	+0.132	0.914	0.457	1.419	1.340	+1.79
1834	Apr. 15	0.424	0.067	0.847	-0.052	0.994	0.251	1.455	1.356	+1.12
1835	May 1	0.404	0.059	0.782	0.222	1.025	-0.031	1.394	1.235	+0.87
1836	May 11	0.371	0.051	0.660	0.358	1.020	+0.186	1.274	1.019	+1.07
1837	May 17	0.325	0.041	0.500	0.432	0.977	0.395	1.097	0.745	+0.77
1838	May 21	-0.265	+0.031	-0.325	-0.437	+0.895	+0.590	+0.873	-0.456	+0.73

Equations from the Declinations—Continued.

			x_1	x_2	x_3	x_4	x_5	x_6	x_7	x_8	"
1839	June	12	-0.202	+0.021	-0.174	-0.380	+0.765	+0.771	+0.641	-0.221	+0.04
1840	June	21	0.127	0.012	0.054	0.259	0.607	0.918	0.392	-0.049	-0.04
1841	June	23	-0.043	+0.004	0.002	-0.089	0.424	1.027	+0.133	+0.008	-0.17
1842	July	20	+0.031	-0.002	0.013	+0.065	+0.205	1.087	-0.077	-0.037	-0.38
1843	Aug.	9	0.108	0.007	0.085	0.210	-0.018	1.095	0.279	0.166	-0.08
1844	Aug.	10	0.191	0.010	0.226	0.328	0.229	1.065	0.482	0.363	-0.58
1845	Aug.	21	0.262	0.011	0.394	0.375	0.432	0.983	0.647	0.546	-0.34
1846	Sept.	5	0.322	0.011	0.565	0.348	0.615	0.858	0.782	0.666	-0.42
1847	Sept.	15	0.374	0.009	0.719	0.252	0.770	0.703	0.902	0.689	-0.47
1848	Sept.	23	0.412	0.005	0.826	+0.099	0.894	0.519	1.001	0.592	-0.99
1849	Oct.	16	0.431	-0.001	0.857	-0.084	0.979	0.302	1.060	0.376	-1.52
1850	Oct.	14	0.438	+0.003	0.818	0.273	1.032	+0.085	1.101	-0.071	-1.35
1851	Nov.	5	0.420	0.008	0.697	0.427	1.029	-0.161	1.076	+0.248	-0.95
1852	Nov.	17	0.377	0.011	0.516	0.511	0.982	0.406	0.995	0.526	-0.62
1853	Nov.	9	0.295	0.011	0.294	0.482	0.884	0.631	0.800	0.641	-0.63
1854	Nov.	30	0.199	0.010	0.117	0.360	0.715	0.846	0.552	0.584	-0.97
1856	Jan.	3	+0.092	+0.006	0.017	-0.174	0.476	1.007	-0.260	+0.334	-0.28
1857	Jan.	29	-0.027	-0.002	0.008	+0.051	-0.203	1.086	+0.071	-0.046	+0.21
1858	Jan.	30	0.159	0.013	0.120	0.278	+0.059	1.106	0.451	0.559	+0.51
1859	Feb.	22	0.258	0.024	0.296	0.396	0.323	1.034	0.738	0.970	+0.88
1860	Mar.	4	0.340	0.035	0.505	0.417	0.548	0.913	0.987	1.297	+0.10
1861	Mar.	27	0.387	0.043	0.676	0.336	0.730	0.736	1.139	1.434	+0.91
1862	Apr.	16	0.411	0.050	0.790	0.193	0.863	0.536	1.229	1.426	+0.90
1863	Apr.	15	0.425	0.057	0.850	+0.018	0.963	0.341	1.286	1.326	+0.87
1864	Apr.	28	0.413	0.059	0.817	-0.157	1.014	-0.123	1.234	1.107	+1.19
1865	May	6	0.387	0.059	0.720	0.310	1.028	+0.093	1.121	0.845	+1.01
1866	May	15	-0.346	-0.057	-0.573	-0.397	+1.001	+0.307	+0.958	-0.580	+0.54

Equations from the Declinations—Continued.

		$x_1.$	$x_2.$	$x_3.$	$x_4.$	$x_5.$	$x_6.$	$x_7.$	$x_8.$	"
1867	May 20	-0.292	-0.051	-0.401	-0.427	+0.936	+0.510	+0.756	-0.345	+0.72
1868	June 13	0.232	0.043	0.240	0.399	0.817	0.699	0.556	0.190	+1.13
1869	June 23	0.161	0.031	0.104	0.304	0.673	0.860	0.354	0.072	-0.04
1870	July 1	0.082	0.017	-0.019	0.162	0.499	0.986	0.162	0.035	+0.53
1871	July 27	-0.007	-0.001	+0.002	-0.013	0.286	1.060	+0.006	0.040	+0.60
1872	July 22	+0.083	+0.019	-0.055	+0.159	+0.081	1.103	-0.151	0.081	+0.03
1873	Aug. 1	0.164	0.039	0.167	0.286	-0.137	1.089	0.265	0.103	+0.13
1874	Aug. 25	0.231	0.057	0.314	0.351	0.353	1.016	0.343	-0.084	-0.54
1875	Sept. 7	0.295	0.076	0.484	0.360	0.527	0.918	0.405	+0.017	-1.10
1876	Sept. 10	0.354	0.094	0.659	0.303	0.708	0.771	0.463	0.125	-1.03
1877	Oct. 1	0.393	0.109	0.779	0.182	0.845	0.590	0.496	0.301	-1.09
1878	Oct. 3	0.425	0.122	0.852	+0.016	0.950	0.398	0.541	0.521	-1.61
1879	Oct. 22	0.435	0.130	0.845	-0.156	1.013	+0.173	0.572	0.729	-1.45
1880	Nov. 6	0.427	0.132	0.775	0.326	1.032	-0.064	0.600	0.889	-1.82
1881	Nov. 20	0.396	0.126	0.601	0.446	1.002	0.307	0.608	0.979	-0.85
1882	Nov. 26	0.337	0.111	0.398	0.482	0.926	0.545	0.566	0.955	-0.75
1883	Dec. 4	0.247	0.084	0.194	0.412	0.788	0.765	0.447	0.781	-1.10
1884	Dec. 19	0.137	0.048	0.051	0.247	0.584	0.949	0.258	0.484	-0.17
1886	Jan. 1	+0.010	+0.004	0.001	-0.019	0.338	1.069	-0.001	+0.082	+0.36
1887	Jan. 31	-0.105	-0.039	0.058	+0.187	-0.054	1.106	+0.258	-0.311	+0.96
1888	Feb. 3	-0.226	-0.086	-0.223	+0.366	+0.206	-1.080	+0.572	-0.748	+0.87

The normal equations which result from these equations of condition follow :

$x_1.$	$x_2.$	$x_3.$	$x_4.$	$x_5.$	$x_6.$	$x_7.$	$x_8.$	"
77.80	+ 0.29	- 7.30	- 1.43	+ 0.11	- 0.15	-196.19	+ 88.23	-34.26=0,
+ 0.29	+ 5.91	- 2.19	- 3.44	+ 0.01	+ 0.03	+ 5.21	+ 11.81	- 1.09=0,
- 7.30	- 2.19	+160.45	+ 0.91	+ 0.08	+ 0.01	- 30.23	+107.75	+26.50=0,
- 1.43	- 3.44	+ 0.91	+144.45	+ 0.05	+ 0.08	+ 9.07	-131.00	+ 0.18=0,

$$\begin{array}{r}
\begin{array}{cccccccc}
x_1. & x_2. & x_3. & x_4. & x_5. & x_6. & x_7. & x_8. & ''
\end{array} \\
+ & 0.11 & + & 0.01 & + & 0.08 & + & 0.05 & + & 40.16 & + & 0.09 & - & 0.46 & - & 2.02 & + & 34.84 = 0, \\
- & 0.15 & + & 0.03 & + & 0.01 & + & 0.08 & + & 0.09 & + & 37.29 & + & 0.58 & - & 0.21 & - & 8.82 = 0, \\
- & 196.19 & + & 5.21 & - & 30.23 & + & 9.07 & - & 0.46 & + & 0.58 & + & 522.99 & - & 252.71 & + & 74.80 = 0, \\
+ & 88.23 & + & 11.81 & + & 107.75 & - & 131.00 & - & 2.02 & - & 0.21 & - & 252.71 & + & 392.54 & - & 5.82 = 0.
\end{array}$$

Their solution gives

$$\begin{array}{ll}
'' & '' \\
x_1 = +1.955 & x_5 = -0.881 \\
x_2 = +0.110 & x_6 = +0.238 \\
x_3 = +0.190 & x_7 = +0.479 \pm 0.116 \\
x_4 = -0.244 & x_8 = -0.258 \pm 0.0384
\end{array}$$

By this solution the sum of the squares of the absolute terms is reduced from $[nn] = 124.67$ to $[nn.8] = 67.12$. From which it results that the probable error of a normal of the weight unity is $\pm 0''.33$. The corresponding probable errors of the corrections of the masses of Jupiter and Uranus are given above. The values of the masses of Jupiter and Uranus, given by this discussion, are

$$\text{Mass of Jupiter} = \frac{1}{1047.378 \pm 0.121},$$

$$\text{Mass of Uranus} = \frac{1}{23239 \pm 89}.$$

As the values of these masses are also derivable from other sources, it is desirable to have the corrections expressed in terms of the two indeterminates x_7 and x_8 ; they are as follows:

$$\begin{array}{l}
'' \\
x_1 = +0.428 + 2.551 x_7 - 1.183 x_8, \\
x_2 = +0.115 - 0.933 x_7 - 1.718 x_8, \\
x_3 = -0.144 + 0.292 x_7 - 0.754 x_8, \\
x_4 = +0.007 - 0.062 x_7 + 0.859 x_8, \\
x_5 = -0.869 + 0.004 x_7 + 0.054 x_8, \\
x_6 = +0.240 - 0.005 x_7 + 0.001 x_8.
\end{array}$$

The elements on which the provisional tables were founded are the following:

Epoch 1850, Jan. 0.0, Greenwich M. T.

$$\begin{array}{l}
'' \\
L = 14 \ 49 \ 38.13, \\
\pi = 90 \ 6 \ 41.50, \\
\Omega = 112 \ 20 \ 49.05, \\
i = 2 \ 29 \ 40.19, \\
e = 0.05606038. \\
n = 43996''.20594.
\end{array}$$

The constant of the mean obliquity of the ecliptic for 1850 used in the discussion was adopted from LEVERRIER, and is $23^{\circ} 27' 31''.83$. If we suppose this ought to receive the correction $\delta \epsilon$, the inclination and the longitude of the ascending node of Saturn will receive proportionate corrections. The corrected elements then become

$$\begin{aligned} L &= 14\ 49\ 38.558 + 2.551 x_7 - 1.183 x_8, \\ \pi &= 90\ 6\ 41.62 - 1.11 x_7 + 15.32 x_8, \\ \Omega &= 112\ 20\ 54.56 - 0.11 x_7 + 0.02 x_8 + 21.23 \delta \epsilon, \\ i &= 2\ 29\ 39.321 + 0.004 x_7 + 0.054 x_8 + 0.380 \delta \epsilon, \\ e &= 0.05605968 + 142 x_7 - 366 x_8, \\ n &= 43996''.20709 - 0.00933 x_7 - 0.01718 x_8. \end{aligned}$$

In the case of e the coefficients of the indeterminates are in units of the eighth decimal.

In order to see what the material we have used was capable of giving, the masses of Jupiter and Uranus were derived from the equations of condition belonging to the last century; the results were

$$\text{Mass of Jupiter} = \frac{1}{1046.117 \pm 0.919}, \quad \text{Mass of Uranus} = \frac{1}{20927 \pm 943}.$$

The values of BOUVARD $\frac{1}{1070.5}$ and $\frac{1}{17918}$, which were obtained from the observations down to 1814 inclusive, can then only have resulted from the too rude reduction and the too imperfect theory.

The residuals left by the above solution in the case of each normal, together with the number of observations the latter is founded upon and the weight it has received in the discussion, are as follows:

Date.	Obs.—Cal.		No. of obs.		Weight.	
	$\Delta \alpha \cos \delta.$	$\Delta \delta$	α	δ	α	δ
1751 May 28	+1.62	+1.25	8	8	0.1	0.1
1752 Mar. 10	+1.34	+1.94	3	3	0.05	0.05
1752 June 29	—0.05	+1.91	5	5	0.05	0.05
1752 Aug. 18	+0.54	+0.74	2	2	0.03	0.03
1753 Apr. 9	+3.24	+1.64	2	2	0.03	0.03
1753 July 3	—1.19	—0.25	6	6	0.1	0.1
1753 Aug. 26	—2.74	+0.92	3	2	0.04	0.03
1754 July 27	—0.48	+1.23	4	4	0.05	0.05
1754 Oct. 2	—1.68	—2.52	3	3	0.04	0.04
1755 July 20	—0.93	+1.83	3	3	0.04	0.04

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Date.	Obs.—Cal.		No. of obs.		Weight.	
	$\Delta \alpha \cos \delta$	$\Delta \delta$	α	δ	α	δ
1756 Aug. 4	+0.11	+1.36	2	2	0.03	0.03
1756 Oct. 8	+0.54	+1.05	3	3	0.04	0.04
1757 Aug. 9	—2.30	+0.18	14	13	0.2	0.2
1757 Nov. 5	—3.37	—0.80	9	9	0.15	0.15
1758 Sept. 1	—0.34	—0.71	5	5	0.06	0.06
1758 Nov. 6	—1.04	+0.04	6	6	0.1	0.1
1759 Aug. 15	—0.96	—0.57	7	7	0.1	0.1
1759 Nov. 29	+1.07	—1.37	4	4	0.06	0.06
1760 Sept. 5	+0.22	—1.02	5	5	0.06	0.06
1760 Dec. 17	+0.38	+0.11	7	4	0.1	0.05
1761 Aug. 15	—1.26	—1.25	10	9	0.15	0.15
1761 Oct. 2	—2.22	—1.29	12	10	0.15	0.15
1761 Dec. 7	+0.10	—1.35	17	15	0.2	0.2
1762 Oct. 17	+3.89	—1.06	13	11	0.1	0.1
1763 Nov. 3	+0.32	+2.82	24	23	0.2	0.2
1764 Dec. 12	+1.64	+2.85	5	4	0.06	0.06
1765 Nov. 21	—0.57	+0.16	5	5	0.06	0.06
1766 Dec. 8	—0.68	+0.08	1	1	0.02	0.02
1767 Dec. 20	—0.83	+2.90	3	3	0.04	0.04
1769 Jan. 3	—0.14	—1.89	3	3	0.04	0.04
1770 Jan. 19	+1.34	+0.68	2	2	0.03	0.03
1771 Feb. 2	—0.39	—0.46	1	1	0.02	0.02
1772 Feb. 14	+3.11	+1.65	3	3	0.04	0.04
1773 Feb. 27	—0.57	+2.66	2	2	0.03	0.03
1774 Mar. 14	—2.71	+1.55	1	1	0.02	0.02
1775 Mar. 30	—0.51	—0.09	1	1	0.02	0.02
1776 Apr. 5	+0.30	+4.42	1	1	0.02	0.02
1777 Apr. 18	+1.04	—0.43	2	2	0.03	0.03
1778 May 2	+1.82	—0.82	1	1	0.02	0.02

Date.	Obs.—Cal.		No. of obs.		Weight.	
	$\Delta \alpha \cos \delta$	$\Delta \delta$	α	δ	α	δ
1779 May 10	—6.47	+0.48	1	1	0.02	0.02
1780 May 25	—0.88	+5.14	2	2	0.03	0.03
1782 June 18	—2.52	—1.90	1	1	0.02	0.02
1783 July 28	—3.19	+5.90	1	1	0.02	0.02
1784 July 13	—6.36	+2.63	1	1	0.02	0.02
1785 July 24	—0.95	+0.72	2	1	0.03	0.02
1786 Aug. 6	—4.29	+4.25	1	1	0.02	0.02
1787 Aug. 18	—6.01	+0.39	1	1	0.02	0.02
1788 Aug. 30	—0.98	—0.21	4	4	0.05	0.05
1789 Sept. 11	+0.39	+0.34	5	5	0.06	0.06
1790 Sept. 22	+0.69	+2.77	3	3	0.04	0.04
1791 Oct. 8	+1.02	—0.09	7	8	0.1	0.1
1792 Oct. 24	+0.13	—0.18	12	12	0.15	0.15
1793 Nov. 7	—0.45	—0.06	2	2	0.03	0.03
1794 Nov. 14	—0.98	+1.00	6	5	0.06	0.06
1795 Dec. 1	+5.23	+1.50	2	2	0.03	0.03
1796 Dec. 24	+0.57	+6.93	1	1	0.02	0.02
1797 Dec. 30	—1.36	+0.18	3	2	0.04	0.03
1799 Jan. 13	+2.75	—0.54	1	1	0.02	0.02
1800 Jan. 26	—3.35	—0.24	3	3	0.04	0.04
1801 Feb. 28	+1.04	+0.67	7	7	0.1	0.1
1802 Feb. 27	—1.94	+0.76	14	14	0.15	0.2
1803 Mar. 19	+2.71	—1.29	13	7	0.15	0.1
1804 Mar. 26	+1.69	—2.27	20	18	0.2	0.2
1805 Apr. 6	+2.38	—0.56	21	21	0.2	0.2
1806 Apr. 24	+1.12	—1.06	12	10	0.15	0.15
1807 May 1	—1.44	—0.47	15	15	0.2	0.2
1808 May 12	+1.52	—1.32	19	19	0.2	0.2
1809 May 20	+1.10	+0.25	19	17	0.2	0.2

Date.	Obs.—Cal.		No. of obs.		Weight.	
	$\Delta \alpha \cos \delta$	$\Delta \delta$	α	δ	α	δ
1810 June 5	−0.58	+0.71	15	15	0.2	0.2
1811 June 14	+1.37	+0.39	23	23	0.25	0.25
1812 June 29	+2.04	−0.25	20	18	0.25	0.2
1813 July 9	+3.62	−0.44	8	8	0.1	0.1
1814 July 21	−0.60	+0.78	24	25	0.3	0.3
1815 Aug. 2	−1.76	+0.22	18	7	0.2	0.1
1816 Aug. 16	+2.82	−1.48	18	10	0.25	0.15
1817 Aug. 27	+0.70	+0.80	12	10	0.15	0.15
1818 Sept. 6	−0.14	+1.13	14	8	0.2	0.15
1819 Sept. 20	+1.36	−0.62	14	14	0.2	0.2
1820 Oct. 3	+1.67	−0.25	14	13	0.2	0.2
1821 Oct. 18	+1.82	−0.03	12	12	0.2	0.2
1822 Nov. 7	−0.16	+0.22	27	30	0.4	0.5
1823 Nov. 13	−1.34	+0.69	12	13	0.2	0.2
1824 Nov. 28	−1.50	+0.34	8	9	0.15	0.15
1825 Dec. 11	−2.09	+0.41	8	8	0.15	0.15
1827 Jan. 13	−1.17	+0.57	10	7	0.2	0.15
1828 Feb. 3	−0.86	−0.95	9	8	0.2	0.2
1829 Feb. 17	−1.12	+0.40	23	15	0.5	0.4
1830 Mar. 5	−0.14	+0.47	46	20	0.6	0.5
1831 Mar. 4	−0.93	+0.17	63	39	0.7	0.6
1832 Mar. 22	−0.06	−0.38	95	55	1	1
1833 Apr. 12	+0.65	−0.98	64	66	1	1
1834 Apr. 15	−1.10	−0.33	121	78	1	1
1835 May 1	−0.06	−0.13	72	62	1	1
1836 May 11	+1.08	−0.37	102	92	1	1
1837 May 17	+0.77	−0.16	95	99	1	1
1838 May 21	+0.62	−0.16	119	104	1	1
1839 June 12	−0.28	+0.37	114	104	1	1

Date.	Obs.—Cal.		No. of obs.		Weight.	
	$\Delta \alpha \cos \delta$	$\Delta \delta$	α	δ	α	δ
1840 June 21	+0.14	+0.33	98	84	1	1
1841 June 23	+0.14	+0.26	60	58	1	1
1842 July 20	+0.25	+0.25	134	130	1	1
1843 Aug. 9	+0.44	—0.27	101	96	1	1
1844 Aug. 10	+0.92	+0.01	78	76	1	1
1845 Aug. 21	—0.14	—0.46	101	83	1	1
1846 Sept. 5	—0.38	—0.57	84	81	1	1
1847 Sept. 15	—0.09	—0.64	108	115	1	1
1848 Sept. 23	+0.33	—0.20	72	65	1	1
1849 Oct. 16	+0.32	+0.33	33	29	1	1
1850 Oct. 14	+0.74	+0.18	52	51	1	1
1851 Nov. 5	—0.21	—0.10	27	24	1	1
1852 Nov. 17	+0.05	—0.27	38	41	1	1
1853 Nov. 9	—0.26	—0.06	38	39	1	1
1854 Nov. 30	—0.93	+0.53	36	48	1	1
1856 Jan. 3	—0.80	+0.13	38	34	1	1
1857 Jan. 29	—0.37	—0.05	56	51	1	1
1858 Jan. 30	—1.10	—0.10	63	71	1	1
1859 Feb. 22	—0.72	—0.23	74	70	1	1
1860 Mar. 4	—0.34	+0.72	74	58	1	1
1861 Mar. 27	+0.25	+0.04	56	59	1	1
1862 Apr. 16	+0.35	+0.09	77	74	1	1
1863 Apr. 15	+0.64	+0.18	105	108	1	1
1864 Apr. 28	+0.13	—0.16	68	66	1	1
1865 May 6	—0.24	+0.03	67	62	1	1
1866 May 15	—0.32	+0.45	75	77	1	1
1867 May 20	—0.14	+0.16	64	62	1	1
1868 June 13	—0.34	—0.40	70	63	1	1
1869 June 23	—0.14	+0.59	63	55	1	1

		"	"				
1870 July	1	-0.77	-0.20	96	90	1	1
1871 July	27	-1.02	-0.48	42	41	1	1
1872 July	22	-1.14	-0.16	60	59	1	1
1873 Aug.	1	-0.97	-0.50	73	79	1	1
1874 Aug.	25	-1.01	-0.05	74	73	1	1
1875 Sept.	7	+0.06	+0.32	86	91	1	1
1876 Sept.	10	-0.68	+0.11	72	75	1	1
1877 Oct.	1	+0.13	+0.08	57	58	1	1
1878 Oct.	3	+0.72	+0.53	57	53	1	1
1879 Oct.	22	+0.52	+0.37	72	73	1	1
1880 Nov.	6	+0.15	+0.81	66	65	1	1
1881 Nov.	20	+0.87	-0.04	72	72	1	1
1882 Nov.	26	+0.76	+0.03	35	36	0.8	0.8
1883 Dec.	4	+0.63	+0.60	44	37	0.8	0.8
1884 Dec.	19	+0.79	-0.02	30	26	0.8	0.8
1886 Jan.	1	+0.51	-0.23	17	17	0.5	0.5
1887 Jan.	31	+0.60	-0.51	23	23	0.5	0.5
1888 Feb.	3	+0.44	-0.12	12	12	0.5	0.5

From the consideration of the declinations of both Jupiter and Saturn it has been concluded that Professor Boss's system of declinations, in the region neighboring the equator, needs, in the average, a correction which, for different epochs, is given by the formula

$$-0''.01 + 0''.0045(t - 1850).$$

Accordingly the residuals in declination, just given, have been thus corrected.

It will be noticed that the declinations are much better represented by the theory than the right ascensions, as the sum of the squares of the residuals is about 20 for the former against 47 for the latter. The residuals of the right ascension frequently show a systematic character, especially in the latter half of the period. However, all the efforts I have made to detect periodicity in them have led to no result. They may be attributed to one of three causes. Either some error has been committed in the theory, or some force acts on Saturn of which we know nothing, or the observations are affected with systematic errors which their combination has not completely eliminated. The last seems to have the greatest degree of probability in its favor.

The mass of Jupiter given by the foregoing discussion is in fair agreement with the values which have been obtained from other sources, but the mass obtained for Uranus is to a considerable degree smaller than the values given by observations of the satellites. It seems to me possible that its determination from the observations of Saturn is unfavorably influenced by the presence of systematic errors in the latter.

CONSTRUCTION OF THE TABLES.

These tables of Saturn are founded on the following elements for the planet derived by substituting in the expressions given on page 161 the values of x_7 and x_8 corresponding to the mass of Uranus and Neptune given below, and putting $\delta \epsilon = -0''.15$.

Epoch 1850, Jan. 0. 0, Greenwich mean time.

$$\begin{aligned} L &= 14 \quad 49 \quad 39.95 \\ \pi &= 90 \quad 6 \quad 39.53 \\ \Omega &= 112 \quad 20 \quad 51.38 \\ i &= 2 \quad 29 \quad 39.26 \\ e &= 0.05606075 \\ n &= 43996''.20414 \\ \log. a &= 0.9794957103 \end{aligned}$$

The values assumed for the principal disturbing masses are:

$$\text{Jupiter} = \frac{1}{1047.355}, \quad \text{Uranus} = \frac{1}{22869}, \quad \text{Neptune} = \frac{1}{19700}.$$

The values of the constituents of the arguments occurring in the formulæ are:

$$\begin{aligned} g &= 148 \quad 1 \quad 58.33 + 109256.63954t \\ g' &= 284 \quad 43 \quad 0.42 + 43996.20414t \\ g'' &= 220 \quad 10 \quad 10.35 + 15425.752t \\ g''' &= 291 \quad 48 \quad 8.61 + 7864.935t \\ \varphi - \gamma &= 229 \quad 8 \quad + 2062645t \\ \oplus - \gamma &= 84 \quad 59 \quad + 1251981t \end{aligned}$$

g, g', g'', g''' , denoting severally the mean anomalies of Jupiter, Saturn, Uranus, and Neptune, and φ, \oplus , and γ the mean longitudes of Venus, the Earth, and Saturn.

It will be gathered from the value of n , just given, that the mean motion of Saturn in one day is $120''.45504214$, and the period is 10759.200918 days. It is preferable to express the fundamental argument z in mean solar days rather than to use nz in arc, and to use as the unit of time the revolution of Saturn in the parts of the coefficients which are factored by the time or its various powers. Time thus counted from 1850.0 we will denote by m . Thus, it is evident that to obtain δz in this form, the coefficients

in the expressions for $n\delta z$ ought to be multiplied by a factor whose logarithm is 7.9191750 if they do not involve T , but by a factor whose logarithm is 7.3883648 if they multiply T , and by a factor whose logarithm is 6.8575545 if they multiply T^2 , and by a factor whose logarithm is 6.3267443 if they multiply T^3 .

The heliocentric longitude of Saturn referred to the mean equinox and ecliptic of date is

$$=f+R+50''.258141t,$$

where f and R denote severally the true anomaly and the reduction to the ecliptic computed as though the elements of the orbit given above were absolutely constant, but in which the actual time receives an augmentation δz having the following expression. The coefficients independent of m have five places of decimals of a mean solar day; those multiplying m , m^2 , and m^3 severally six, seven, and eight. (See *Astronomical Papers*, Vol. iv, p. 568.)

In the expressions for the coordinates which follow, the inequalities of the fundamental argument and of the latitude are given the form

$$k_0 \sin (\chi + K_0) + k_1 m \sin (\chi + K_1) + k_2 m^2 \sin (\chi + K_2) + k_3 m^3 \sin (\chi + K_3),$$

and that of the common log. $\left(\frac{r}{r'} = 1 + \nu\right)$ the form

$$k_0 \cos (\chi + K_0) + k_1 m \cos (\chi + K_1) + k_2 m^2 \cos (\chi + K_2) + k_3 m^3 \cos (\chi + K_3).$$

χ	$\delta z'$							
	k_0	K_0	k_1	K_1	k_2	K_2	k_3	K_3
$g' \quad g''$		$^{\circ} \quad '$		$^{\circ} \quad ' \quad ''$		$^{\circ} \quad '$		$^{\circ}$
0 0			—30		12927		—600	
1 0			657765	237 59 1.4	12439	142 22.0	39	349
2 0	2160	121 24.2	13440	237 21.0	754	119 22	27	26
3 0	538	91 39	476	243.6	49	113	1	4
4 0	22	4	28	240	3	116		
5 0	2	214						
4—1	5	21						
3—1	5	76						
2—1	162	165 51	19	264 34				
1—1	301	141 48	43	228 48	1	294		
0—1	10041	86 45 58	357	209 10	5	310		
1—1	5977	189 35 5	725	303 39	9	294		
2—1	3. 50470	181 25 45.0	10207	122 26 59	158	38 34		
3—1	27834	121 13 45.0	2027	31 8.0	78	350 52		
4—1	84	90 31	79	16 39	7	306		
5—1	36	159 30	8	29	1	315		
6—1	2	124						
7—1	2	257						
—2—2	3	141	1	241				
—1—2	63	244 22	8	342				
0—2	136	114 12	5	276				
1—2	2296	250 7.7	94	289 55				
2—2	26600	156 58 15	38	7 59	1	235		
3—2	21710	135 33 9	2237	42 1.6	88	301 7		
4—2	5. 67852	277 23 46.9	40453	179 34 58	1099	84 31.9		
{ —82'' .0017 t }	24. 15265	247 6 43.97	34245	67 6 44	2154	221 43.0		
6—2	1428	255 17.3	5052	125 59.7	640	27 57		
7—2	28	323 7	198	125 33	25	15 41		
8—2	5	339	10	125				
—1—3	3	208	1	289				
0—3	24	335	3	62				
1—3	115	269 30	4	348				
2—3	158	142 54	5	345				
3—3	5410	234 23.1	5	357	1	246		
4—3	3820	203 15.6	161	107 21	2	11		
5—3	2699	174 37.4	221	77 49	8	341		
6—3	2773	157 20.7	338	58 30	26	314 36		
7—3	5189	31 24.2	621	289 54	13	116 10		
8—3	543	18 10	110	303 37	2	106		
9—3	47	110 32						
10—3	1	59						
0—4	1	291						
1—4	9	22	1	135				
2—4	17	25	1	93				
3—4	102	205 21	1	356				
4—4	1587	312 8.6	1	62				
5—4	1072	281 50.5	47	185 6	1	115		
6—4	575	249 33	49	152 59	1	75		
7—4	311	41 51	33	300 15	1	30		
8—4	1235	14 35.9	189	277 44	2	203		
9—4	7330	163 42.4	1293	67 33.6	88	331 39		
{ —148'' .145 t }	22255	133 37 12	556	313 37.2	376	122 44		
11—4	1	197	49	13 57	3	275		
1—5	1	0						
2—5	5	115						
3—5	9	106						
4—5	57	280 55	1	353				

χ	$\delta z'$			
	k_0	K_0	k_1	K_1
δ'		$^{\circ}$	$'$	$^{\circ}$
5-5	548	29 42	1	132
6-5	398	0 7	18	263.7
7-5	182	332 12	15	237.3
8-5	99	121 33	13	22.1
9-5	120	90 5	17	355.2
10-5	107	59 45	17	326.2
11-5	175	39 34	41	300.3
12-5	200	213 4	44	108.0
2-6	1	73		
3-6	2	194		
4-6	5	200		
5-6	32	356 15	1	86
6-6	209	106 44	1	215
7-6	166	78 29	7	346
8-6	77	50 55	6	312
9-6	39	199 40	5	105
10-6	43	169 12	3	65
11-6	21	135 9	2	39
12-6	11	103 13	1	24
5-7	2	298	1	343
6-7	17	72 38	1	155
7-7	82	183 15		
8-7	72	156 23	3	60
9-7	37	130 9	3	34
10-7	14	275 8	3	177
11-7	19	242 24	3	153
12-7	8	219	1	114
6-8	2	25		
7-8	9	152		
8-8	34	260 19		
9-8	33	233 52	1	138
10-8	19	205 38	1	109
11-8	6	352	1	256
12-8	9	325	1	225
8-9	5	227		
9-9	14	336		
10-9	16	313		
11-9	9	286	1	195
12-9	2	57		
9-10	3	302		
10-10	6	50		
11-10	8	29		
12-10	5	2		
10-11	1	20		
11-11	3	125		
12-11	4	106		
11-12	1	97		
12-12	1	195		

X	$\delta z'$			
	k_0	K_0	k_1	K_1
$g'' g'$		$^{\circ} /$		$^{\circ} /$
1 1	17	179 15	3	20
1 0	761	145 45	27	322 51
1-1	6604	79 2.1	5	281
1-2	126	99 26	17	201 39
1-3	3	97	1	213
2+1	1	153		
2 0	94	139 36	11	246 39
2-1	6313	354 17.1	237	216 34
2-2	10175	336 43.3	13	113 4
2-3	193	330 22	27	98 45
2-4	6	330	1	90
3+1	1	305		
3 0	50	306 36	46	200 8
3-1	23440	321 46.5	948	182 57
3-2	19196	119 19.8	348	307 48
3-3	1128	66 35	47	246 2
3-4	36	50 6	4	203
3-5	1	45		
4 0	1	284		
4-1	45	288 22	1	123
4-2	749	83 39	31	267 4
4-3	578	18 8	13	203 20
4-4	211	129 39	2	148
4-5	12	111	1	256
4-6	1	106		
5-1	3	242		
5-2	244	48 8	16	231 28
5-3	353	341 6	15	164 40
5-4	116	92 57	1	270
5-5	59	207 39	1	207
5-6	5	187		
6-2	98	4 38	8	192
6-3	200	124 25	12	309
6-4	45	61 29	2	245
6-5	36	172 12		
6-6	19	284 39		
6-7	2	263		
7-3	13	89 21	1	270
7-4	16	22 15	1	207
7-5	13	135 29		
7-6	13	250 29		
7-7	7	1 22		
7-8	1	340		
8-3	6	53		
8-4	9	347		
8-5	4	98		
8-6	5	214		
8-7	5	328		
8-8	2	77		
9-4	3	131		
9-5	1	73		
9-6	1	177		
9-7	2	290		
9-8	2	45		
9 9	1	153		
10-7	1	256		
10-8	1	9		
10-9	1	124		

X	$\delta z'$			
	k_0	K_0	k_1	K_1
$g''' g'$		$^{\circ} /$		
1 1	2	270		
1 0	84	287 29		
1-1	1425	312 59		
1-2	23	309 1		
1-3	1	303		
2 0	10	269 30		
2-1	750	84 44		
2-2	873	86 17		
2-3	22	87 22		
2-4	1	90		
3-1	26	166 12		
3-2	85	197 18		
3-3	78	39 58		
3-4	3	42		
4-1	1	284		
4-2	7	308		
4-3	8	151		
4-4	12	353		
4-5	1	354		
5-2	1	67		
5-3	1	262		
5-4	2	102		
5-5	2	308		
6-6	1	261		
$g' g' g''$				$^{\circ} /$
5-2-3	1549	208 34	71	80 14
6-2-3	23778	6 56.0	1897	242 4
2-1+1	18	270		
3-1-1	139	288 21		
3-1-2	170	79 43		
4-2+3	51	213		
4-1-4	87	37 11		
7-2-6	126	353 26		
$\odot - \odot$	32	0		
$\oplus - \odot$	55	0		

The following expression for the common logarithm of $\frac{r'}{r}$ is obtained by multiplying the terms involving T , T^2 , and T^3 by factors whose logarithms are 9.4691898, 8.9383796, and 8.4075693. It is in units of the seventh decimal.

χ	Common log. $\frac{r'}{r}$							
	k_0	K_0	k_1	K_1	k_2	K_2	k_3	K_3
$\delta' g$		° / "		° / "		° / "		°
0 0	+1826.0		+ 12.37		+0.058			
1 0	187.4	295 24.7	834.91	57 58 50	1.571	322 22.6	0.0005	158
2 0	49.9	293 0	23.17	58 38.0	0.159	303 11	0.0001	206
3 0	14.2	271 43	0.62	77 46	0.011	302 49		
4 0	0.6	311	0.01	82	0.001	299		
— 3 —1	0.2	111						
— 2 —1	4.6	165 26	0.07	263 45				
— 1 —1	10 4	140 34	0.10	235 18				
0 —1	82.0	110 49	0.34	219 39	0.002	299		
1 —1	3782.7	79 45 10	0.94	304 47	0.001	25		
2 —1	2443.3	176 2 38	6.36	121 29.6	0.018	36 17		
3 —1	241.3	305 54.4	1.83	207 37	0.005	188 31		
4 —1	35.1	342 36	0.13	126 52	0.001	134		
5 —1	0.7	309	0.02	214				
6 —1	0.1	294						
— 2 —2	0.1	158						
— 1 —2	1.8	241 2	0.03	341				
0 —2	3.7	210 18	0.03	316				
1 —2	55.2	98.52	0.08	257 18				
2 —2	643.8	156 34.6	0.10	14 5				
3 —2	421.1	141 57.9	3.33	46 59	0.004	339		
4 —2	7005.4	277 15 22	50.26	179 38.4	0.196	85 53		
5 —2	1141.6	62 49 33	1.28	242 50	0.006	6 8		
{ —88'' .928 t }								
6 —2	18.3	77 17	5.73	306 10	0.005	209 17		
7 —2	0.6	114	0.31	306 55	0.001	185		
8 —2			0.02	307				
— 1 —3	0.1	224						
0 —3	0.8	319	0.01	58				
1 —3	1.0	46	0.01	61				
2 —3	5.3	178 39	0.02	342				
3 —3	147.2	233 56.1	0.01	32				
4 —3	102.1	206 23.9	0.40	107 2	0.001	11		
5 —3	59.7	177 52	0.53	78 59	0.002	343		
6 —3	17.3	178 3	0.84	51 41	0.004	314		
7 —3	34.6	32 39	0.71	340 42				
8 —3	4.9	210 27	0.11	153 48				
9 —3	0.7	275	0.61	139				
0 —4	0.1	298						
1 —4	0.4	43	0.01	134				
2 —4	0.5	17						
3 —4	2.8	229 44						
4 —4	44.5	311 30						
5 —4	31.5	285 3	0.12	184 23				
6 —4	14.9	259 21	0.10	157 31				
7 —4	8.1	37 4	0.15	302 47				
8 —4	21.5	15 52	0.27	284 18				
9 —4	93.1	163 39	2.52	67 13	0.010	331 16		
10 —4	11.0	306 25	0.53	215 3	0.003	118		
11 —4	0.2	102						
2 —5	0.2	113						
3 —5	0.2	106						
4 —5	1.5	296 38						
5 —5	15.6	28 45						
6 —5	11.9	3 8	0.05	263				
7 —5	5.5	337 30	0.04	240				

χ	Common log. $\frac{r'}{P}$			
	k_0	K_0	k_1	K_1
$s'' s'$		$^{\circ}$		$^{\circ}$
8-5	2.7	116 7	0.05	24
9-5	3.7	118 23	0.06	354
10-5	2.7	63 43	0.05	325
11-5	3.6	36 26	0.08	300
12-5	0.7	263	0.02	113
3-6	0.1	191		
4-6	0.1	191		
5-6	0.8	8		
6-6	5.9	105 37		
7-6	5.0	80 27	0.02	341
8-6	2.4	56 33	0.02	317
9-6	1.0	191 57	0.02	96
10-6	1.3	171 26	0.02	74
11-6	0.7	144	0.01	47
12-6	0.1	120		
5-7	0.1	279		
6-7	0.4	83		
7-7	2.4	182 5		
8-7	2.2	158 51	0.01	59
9-7	1.1	135 7	0.01	35
10-7	0.4	265	0.01	171
11-7	0.6	247	0.01	150
12-7	0.3	222		
7-8	0.2	158		
8-8	1.0	258		
9-8	1.0	236		
10-8	0.6	214	0.01	113
11-8	0.1	334		
12-8	0.2	325		
8-9	0.1	231		
9-9	0.4	333		
10-9	0.5	313		
11-9	0.3	293		
9-10	0.1	304		
10-10	0.2	48		
11-10	0.2	29		
12-10	0.2	8		
11-11	0.1	122		
12-11	0.1	105		
$s'' s'$				
1-1	0.3	356		
1-0	3.2	345 3	0.02	140
1-1	58.4	79 3		
1-2	2.5	95 57	0.02	202
1-3	0.1	95		
2-0	1.0	328 4	0.02	59
2-1	35.1	350 35	0.08	217
2-2	52.6	336 43.3	0.01	106
2-3	5.2	332 13	0.03	98
2-4	0.2	332		
3-0	0.6	126	0.05	21
3-1	26.1	137 55	0.05	355
3-2	235.0	119 5.6	0.42	308
3-3	21.9	69 58	0.05	252
3-4	1.1	57 13	0.01	211

χ	Common log. $\frac{r'}{P}$			
	k_0	K_0	k_1	K_1
$s'' s'$		$^{\circ}$		$^{\circ}$
3-5	0.1	52		
4-1	0.4	104		
4-2	6.6	80 4	0.03	266
4-3	9.6	19 51	0.02	202
4-4	4.4	128 12		
4-5	0.3	115		
5-2	1.1	38 31	0.01	225
5-3	5.1	342 27	0.02	166
5-4	2.2	93 59		
5-5	1.3	206 15		
5-6	0.1	190		
6-2	0.2	172		
6-3	2.4	123 27	0.01	307
6-4	0.8	65 50		
6-5	0.7	173 49		
6-6	0.4	283		
6-7	0.1	266		
7-3	0.1	84		
7-4	0.3	26		
7-5	0.3	139		
7-6	0.3	252		
7-7	0.2	359		
8-4	0.1	348		
8-5	0.1	104		
8-6	0.1	218		
8-7	0.1	329		
8-8	0.1	75		
$s''' s'$				
1-0	0.2	337		
1-1	15.4	312 58		
1-2	0.5	310		
2-0	0.2	86		
2-1	7.6	84 55		
2-2	14.8	86 17		
2-3	0.6	87		
3-1	0.2	173		
3-2	1.3	195 39		
3-3	1.5	40 12		
3-4	0.1	42		
4-2	0.1	307		
4-3	0.1	148		
4-4	0.3	353		
5-5	0.1	307		
$s'' s'' s''$				
5-2-3	19.6	208 24	0.09	80
6-2-3	8.3	2 4		
$\ominus - b$	0.8	0		
$\oplus - b$	1.4	0		

The expression for the periodic inequalities of the latitude of Saturn given in *Astronomical Papers*, Vol. IV, pp. 574, 575, needs modification on the following account. In tabulating the value of β'_0 we are led to employ

$$m = m_0 + \frac{g' + n' \delta z' - g'_0}{360^\circ},$$

where m_0 denotes the integral part of m and g'_0 the value of g' at the epoch, instead of the value

$$m = m_0 + \frac{g' - g'_0}{360^\circ}.$$

In consequence, we must apply to $\delta \beta'$ the small correction

$$\begin{aligned} -24''.25 \frac{\delta z'}{10759''} \sin(f + 77^\circ) = & +0.0001'' m \\ & + [0.0005 \sin 2g' + 0.0005 \cos 2g'] m \\ & + 0.004 \sin(g' - g) + 0.001 \cos(g' - g) \\ & + 0.004 \sin(3g' - g) - 0.001 \cos(3g' - g) \\ & - 0.002 \sin(3g' - 2g) + 0.008 \cos(3g' - 2g) \\ & + 0.005 \sin(4g' - 2g) + 0.026 \cos(4g' - 2g) \\ & + 0.000 \sin(5g' - 2g) + 0.003 \cos(5g' - 2g) \\ & + 0.016 \sin(6g' - 2g) + 0.022 \cos(6g' - 2g) \\ & + 0.001 \sin(7g' - 2g) + 0.001 \cos(7g' - 2g) \end{aligned}$$

χ	$\Delta \beta'$				χ	$\Delta \beta'$			
	k_0	K_0	k_1	K_1		k_0	K_0	k_1	K_1
$g' - g$	"	"	"	"	$g' - g$	"	"	"	"
0 0	0.329		-0.0031		-1-3	0.001	352		
2 0	0.204	287 13	0.0001	0	0-3	0.003	114		
3 0	0.019	269	0.0001	162	1-3	0.007	84		
4 0	0.005	51			2-3	0.087	89 53		
5 0	0.002	331			3-3	0.041	53 11		
					4-3	0.077	199 40		
3-1	0.003	209			5-3	0.117	176 9		
-2-1	0.002	41			6-3	0.096	155 49		
-1-1	0.026	37	0.0006	311	7-3	0.048	300 27		
0-1	1.804	116 2	0.0072	32 22	8-3	0.002	247		
1-1	0.837	210 46	0.0041	163 10	9-3	0.001	225		
2-1	2.906	225 28.5	0.0142	310 59					
3-1	0.717	185 12	0.0005	276	2-4	0.003	139		
4-1	0.057	301 28	0.0001	117	3-4	0.033	167 31		
5-1	0.037	310 15	0.0001	27	4-4	0.018	134 26		
6-1	0.001	340			5-4	0.014	266 3		
					6-4	0.013	246 33		
-2-2	0.001	279			7-4	0.011	230		
-1-2	0.002	81	0.0001	207	8-4	0.002	171		0
0-2	0.063	91 47	0.0001	237	9-4	0.087	161 51	0.0003	250
1-2	0.258	11 58	0.0008	299	10-4	0.009	341		
2-2	0.116	319 33	0.0002	90	11-4	0.002	273		
3-2	0.214	205 29	0.0016	197					
4-2	8.658	277 44.3	0.0046	67	3-5	0.001	189		
5-2	0.373	110 55	0.0016	330	4-5	0.013	245		
6-2	0.267	20 8	0.0022	269	5-5	0.009	214		
7-2	0.012	25	0.0003	249	6-5	0.004	349		
					7-5	0.003	317		

$\Delta\beta'$			$\Delta\beta'$		
χ	k_0	K_0	χ	k_0	K_0
$g'' g'$	$''$	$^{\circ}$	$g'' g'$	$''$	$^{\circ}$
8-5	0.002	303	4-2	0.025	349 4
9-5	0.003	272	4-3	0.023	281 40
10-5	0.002	247	4 4	0.001	331
11-5	0.002	219			
4-6	0.001	237	5-1	0.001	165
5-6	0.005	323	5-2	0.003	333
6-6	0.004	292	5-3	0.021	244 54
7-6	0.001	63	5-4	0.005	341
8-6	0.001	21			
9-6	0.001	8	6-2	0.001	232
10-6	0.001	351	6-3	0.012	32
			6-4	0.003	333
6-7	0.002	38	6-5	0.001	69
7-7	0.002	9			
$g'' g'$			7-3	0.001	0
1+1	0.019	259 21	7-4	0.001	288
1 0	0.079	220 17	7-5	0.001	45
1-1	0.036	11 34			
1-2	0.035	298 43	$g''' g'$		
1-3	0.002	306	1+1	0.002	137
			1 0	0.005	146
2+1	0.003	164	1-1	0.001	4
2 0	0.040	152 57	1-2	0.002	120
2-1	0.109	301 20	2 0	0.003	276
2-2	0.031	277 36	2-1	0.018	98 27
2-3	0.008	2	2-2	0.001	111
			3-2	0.004	232
3+1	0.002	294			
3 0	0.032	289 10			
3-1	0.046	221 32			
3-2	0.593	20 3			
3-3	0.037	17 4			
3-4	0.003	64			
4-1	0.005	208			

The latitude referred to the ecliptic of date being denoted by $\beta_0' + \delta\beta'$, the formula for getting β_0' is

$$\sin \beta_0' = \sin i_0' \sin (l' - \Omega_0')$$

$$+ [24''.2666 \sin (f' + 77^\circ 3' 36''.0) + 0''.0115 \sin (3.f' + 32^\circ 33')]m$$

$$+ [0''.03752 \sin (f' + 171^\circ 58'.0) + 0''.00003 \sin (3.f' + 126^\circ)]m^2$$

$$+ 0''.000036 m^3 \sin (f' + 253^\circ 44').$$

The reduction to the ecliptic is

$$R = +97''.755 \sin (2l' + 315^\circ 18'.2) + 0''.023 \sin (4l' + 271^\circ).$$

The larger and more important terms of these expressions are tabulated in tables to single entry; the mass of remaining small terms in tables to double entry where the horizontal argument denotes the position of Saturn in its orbit, and the vertical argument the position of the disturbing planet when Saturn last passed a determinate point in its orbit. The latter argument then remains constant during a revolution of Saturn.

In this connection it is important to reduce as much as possible the magnitude of the terms multiplied by the several powers of m . This is effected by equating the rates of motion of the arguments employed in the tables to single entry. If we have the terms

$$A \sin (\chi + \alpha) + Bt \sin (\chi + \beta) + Ct^2 \sin (\chi + \gamma),$$

they can be transformed into

$$A \sin (\chi + \kappa t + \alpha) + B't \sin (\chi + \kappa t + \beta') + C't^2 \sin (\chi + \kappa t + \gamma'),$$

where κ is arbitrary. But if B' is to be a minimum, κ , B' , β' , C' , and γ' are determined by the equations

$$\kappa = -\frac{B}{A} \sin (\alpha - \beta).$$

$$B' \cos (\beta' - \alpha) = B \cos (\alpha - \beta),$$

$$B' \sin (\beta' - \alpha) = 0,$$

$$C' \cos (\gamma' - \alpha) = C \cos (\gamma - \alpha) + \frac{1}{2} A \kappa^2,$$

$$C' \sin (\gamma' - \alpha) = C \sin (\gamma - \alpha) - B \kappa \cos (\alpha - \beta).$$

It will be perceived that if α differs from β by nearly 90° or 270° , B' will be, to a considerable extent, less than B . The formulæ for a series of terms in cosines are the same, but as the expression for z is the most important of those of the three coordinates, the value of κ has, in all cases, been derived from it. In most cases the terms multiplied by m and m^2 are to be tabulated in tables to double entry, when the argument must be retained in the form of χ without the correction κt . But this does not change the value of κ for the first term, and the modifications in this case in the formulæ for C' and γ' are readily seen.

Seventeen arguments are employed for the tables to single entry; they are all expressed in mean solar days, except that before 1550 and after 2150 the actual date in year is preferred to Arg. II. Arg. I is the principal term of the fundamental argument z ; and Saturn had passed its perihelion 8509.236324 days at the epoch of the tables, but we subtract $32^d.28$ from this on account of the constants which we propose to add in Tables VII–XXVI to render the numbers all positive; hence the value of Arg. I at 1850.0 is $8476^d.956324$. Arg. II is simply a number of current days made to be 109760 at the epoch, adopted for the purpose of tabulating terms of long period. The remaining fifteen arguments are made to have the value 0^d at the epoch. The following table contains a statement of these arguments with the value of κ , the period and the daily rate of motion. With reference to κ it is to be noted that this correction to the rate of motion has been employed only when it led to a decided reduction of the terms factored by m .

Argument.	Arc designated.	Period.	Daily motion.
I	g'	^d 10759.200918	["] + 120.45504214
II	Current days merely.		
III	$2g' - g - 24.69832t$	22235.21846	- 58.28591259
IV	$g' - g$	7253.46065	- 178.67333442
V	$3g' - g - 50.994t$	20870.52779	+ 62.09713591
VI	$3g' - 2g - 69.947t$	5466.43700	- 237.08313111
VII	$3g'' - 2g' + 3\delta g''$	11347.53138	- 114.20986251
VIII	$g'' - g' + \delta g''$	16568.30622	- 78.22163489
IX	$-g + 21''.41t$	4333.43713	- 299.0697592
X	$9g' - 4g - 122.778t$	11494.02097	- 112.75427477
XI	$2g'' - g' + 2\delta g'' - 17''.656t$	35963.47000	- 36.036570
XII	$4g' - 3g - 29''.363t$	3118.04272	- 415.6453726
XIII	$5g' - 3g - 56.937t$	4389.26548	- 295.2658040
XIV	$5g' - 2g - 3g'' - 3\delta g'' - 25''.28t$	10557.96076	- 122.7509781
XV	$g' - 2g$	2712.42227	- 477.8017110
XVI	$\oplus - \flat$	378.0919	+ 3427.738
XVII	$\flat - \flat$	229.49365	+ 5647.214

In addition to these arguments we have three vertical arguments for the tables of double entry, which are denoted as A, B, and C, severally, for the actions of Jupiter, Uranus, and Neptune. A is expressed in parts of which 120 make the circumference; B and C in parts of 60 to the circumference. The formulæ for these arguments are

$$A = 55.000 + 297.998362 m_0 - 120 i,$$

$$B = 20.000 + 21.03693 m_0 - 60 i,$$

$$C = 40.000 + 10.72584 m_0 - 60 i,$$

where m_0 denotes the number of the revolution of Saturn in progress (we have made $m_0 = 0$ for that which extends from 1826, October, to 1856, March) and i is a positive or negative integer, so taken that the argument may be positive and less than the number of parts into which the circumference is divided. In order to simplify the interpolation in the tables to double entry, the integral values 55, 20, and 40 have been assigned to A, B, and C for the revolution of Saturn in which $m_0 = 0$. The values of

the four mean anomalies, which correspond to any point in the tables to double entry, are given by the formulæ

$$\begin{aligned} g' &= 1^{\circ} 4.80 + 120.45504214 \times \text{Arg. I}, \\ g &= -1^{\circ} 19.63 + 299.12837656 \times \text{Arg. I} + 3^{\circ} \times A, \\ g'' &= 0^{\circ} 43.35 + 42.23341 \times \text{Arg. I} + 6^{\circ} \times B, \\ g''' &= 1^{\circ} 5.9 + 21.53302 \times \text{Arg. I} + 6^{\circ} \times C. \end{aligned}$$

We proceed to notice the construction of each table.

Table I contains the values of Arguments I–XVII and of $\pi + 50''.258141t$ for Greenwich mean noon of Jan. 0 (Jan. 1 in bissextile years) of each year from 1750 to 1950.

Table II contains the quantities which it is necessary to add to the arguments of the nineteenth century (1801 to 1900, inclusive) in order to obtain the arguments of corresponding years of other centuries. The letters J and G in the column of centuries denote severally the Julian and Gregorian calendars. It is recommended that in deriving positions of Saturn from these tables for dates previous to 1550 and subsequent to 2150 one be content with a degree of accuracy a hundred times less than the tables afford between these epochs. In accordance with this recommendation, before 1500 the decimals of a day are omitted from all the arguments except I, for which two are given instead of four; also the decimals of a second are omitted from $\pi + ht$. For the same reason no numbers are given for XVI and XVII. The inequalities corresponding to these arguments are too minute to be worth consideration at times more remote from the epoch of the tables than 300 years. If one is very fastidious one may take as their values the constants which have been applied in Tables XXII–XXIII to render all the numbers positive. It will be perceived that no numbers are given for II during this time; it has been preferred to tabulate the inequalities appertaining to this argument with the actual date in years.

Table III enables one readily to find the number of days from the beginning of the year, which it is necessary to add to the values of the arguments given in Table I in order to obtain the values which belong to any desired time. The beginning of the year, when it is common, is taken to be the mean noon of Dec. 31 of the preceding year, usually designated as Jan. 0, but when the year is bissextile the mean noon of Jan. 1 is assumed as the beginning. The prime meridian is that of Greenwich.

Table IV enables us to find the motion of $\pi + ht$ from the beginning of the year; h or the motion in a Julian year being $50''.258141$.

Table V gives the values of A, B, and C, the vertical arguments for the tables of double entry as functions of the integer m . When m contains but a single figure, which is always the case between 1750 and 1950, the actual values of the arguments are found in the middle portion of the table. But when m contains more than one figure, the change for multiples of 10 in m is found in the upper and lower portions of the table, for negative values of m in the upper and for positive in the lower. Thus, if we wish the values of the arguments correspondent to $m = -47$, we add the numbers on the line of $m = -40$ to those on the line of $m = -7$, and, where it is necessary

subtract the period of the argument given in the following table. m is an integer, and remains constant while Arg. I is passing through a period; and as long as m remains constant, A, B, and C do so likewise. The point of time when m augments by a unit is when Arg. I = 0^d.

Table VI contains the periods of the arguments, which it is necessary sometimes to subtract from the values obtained by the assistance of the preceding tables. It may often save some labor if we remember that the only object of subtracting a multiple of the period from an argument is to bring the latter within the compass of the table. Usually the tabulation has been extended some days beyond the end of the period. Hence the arguments may often be allowed to run a little beyond their periods. When this is done with Arg. I, however, the integer m must be allowed to stand unchanged, as also the arguments A, B, and C. But when the limits of the tabulation do not allow Arg. I to increase further, we subtract the period and augment m *algebraically* by a unit, and at the same time A, B, and C change their values *per saltum*. Thus it is well to bear in mind that the precise time of change of the values of m , A, B, and C is, to a certain extent, arbitrary, being limited only by the extent of the tabulation, and that the exact time of this change is when one chooses that the period shall be subtracted from Arg. I, which has the effect of throwing one back from a point near the ending of a table to one near its beginning. The change of a unit in the value of m exactly counterbalances any changes which may be produced by passing from the end to the beginning of a table in which Arg. I is an argument.

Tables I–VI contain all that is necessary for the formation of the arguments.

Tables VII–XXXIV contain the inequalities of the fundamental argument.

Desiring that m_0 may be an integer, in the preceding expressions we everywhere write $m_0 + \Delta m$ for m , Δm denoting the fractional portion, which may sometimes be negative as well as positive. We adopt the following expression for Δm :

$$\Delta m = \frac{\text{Arg. I} - 8476^{\text{d}}.9563}{10759^{\text{d}}.2}.$$

This makes $\Delta m = 0$ at the epoch of the tables, and, as the integer $m_0 = 0$ at this time, the sum vanishes, as it should do.

Tables VII, XXVII, XXXII, and XXXIV are connected together. To explain their construction we put

$$X_0 = +0^{\text{d}}.02169 \sin(2g' + 121^{\circ} 24'.2) + 0^{\text{d}}.00538 \sin(3g' + 91^{\circ} 39')$$

$$+ 0.00022 \sin(4g' + 4^{\circ}) + 0^{\text{d}}.00002 \sin(5g' + 214^{\circ}),$$

$$X_1 = -0.000030 + 0^{\text{d}}.657765 \sin(g' + 237^{\circ} 59' 1''.4)$$

$$+ 0.013440 \sin(2g' + 237^{\circ} 21'.0) + 0^{\text{d}}.000476 \sin(3g' + 243^{\circ}.6)$$

$$+ 0.000028 \sin(4g' + 240^{\circ}),$$

$$X_2 = +0.0012927 + 0^{\text{d}}.0012439 \sin(g' + 142^{\circ} 22'.0) + 0^{\text{d}}.0000754 \sin(2g' + 119^{\circ} 22')$$

$$+ 0.0000049 \sin(3g' + 113^{\circ}) + 0^{\text{d}}.0000003 \sin(4g' + 116^{\circ}),$$

$$X_3 = -0.00000600 + 0^{\text{d}}.00000039 \sin(g' + 349^{\circ}) + 0^{\text{d}}.00000027 \sin(2g' + 26^{\circ})$$

$$+ 0.00000001 \sin(3g' + 4^{\circ}).$$

In all these expressions the value of g' is

$$g' = 1^{\circ} 4' 48''.29 + 120''.45504214 \times \text{Arg. I.}$$

Table VII contains the terms (in units of the fourth decimal of the day)

$$0^d.1500 + X_0 + X_1 \Delta m + X_2 (\Delta m)^2 + X_3 (\Delta m)^3.$$

Table XXVII contains the terms (in units of the fifth decimal of the day)

$$-0^d.01810 + X_1 + 2 X_2 \Delta m + 3 X_3 (\Delta m)^2.$$

Table XXXII contains the terms (in units of the sixth decimal of the day)

$$-0^d.000065 + X_2 + 3 X_3 \Delta m.$$

Table XXXIV contains the terms (in units of the seventh decimal of the day)

$$X_3.$$

Table VIII contains the long period inequalities

$$\begin{aligned} \delta z = & 24^d.2 + [24^d.15265 - 0^d.034245 m] \sin (5g' - 2g - 82''.0017t + 247^{\circ} 6' 43''.97) \\ & + 0.0002154 m^2 \sin (5g' - 2g - 82''t + 221^{\circ} 43'.0) \\ & + [0.22255 - 0^d.000556 m] \sin (10g' - 4g - 148''.145t + 133^{\circ} 37'.2) \\ & + 0.0000376 m^2 \sin (10g' - 4g - 148''t + 122^{\circ} 44') \\ & + [0.05189 - 0^d.000124 m] \sin (7g' - 3g - 82''.17t + 31^{\circ} 24'.2) \\ & + 0.0000039 m^2 \sin (7g' - 3g - 82''t + 50^{\circ}.7) \\ & + [0.00543 + 0^d.000029 m] \sin (8g' - 3g - 136''.7t + 18^{\circ} 10') \\ & + 0.000011 m^2 \sin (8g' - 3g - 137''t + 29^{\circ}) \\ & + [0.00200 - 0^d.000011 m] \sin (12g' - 5g - 148''.8t + 213^{\circ} 4') \\ & + [0.23778 - 0^d.001084 m] \sin (6g' - 2g - 3g'' - 45''.81t + 6^{\circ} 56'.0) \\ & + 0.23440 \sin (3g'' - g' + 321^{\circ} 46'.6) + 0^d.000948 m \sin (3g'' - g' + 182^{\circ} 56'.9) \\ & + 0.00098 \sin (6g'' - 2g' + 4^{\circ} 38') + 0^d.000008 m \sin (6g'' - 2g' + 192^{\circ}) \\ & + 0.00018 \sin (2g' - g + g'' + 270^{\circ}) + 0^d.00139 \sin (3g' - g - g'' + 288^{\circ} 21') \\ & + 0.00170 \sin (3g' - g - 2g'' + 79^{\circ} 43') + 0^d.00051 \sin (4g' - 2g + 3g'' + 213^{\circ} 2') \\ & + 0.00087 \sin (4g' - g - 4g'' + 37^{\circ} 11') + 0^d.00126 \sin (7g' - 2g + 6g'' + 353^{\circ} 26') \\ & + 0.000045 m (5g' - 2g - 3g'' - 25''.28t + 28^{\circ} 34'). \end{aligned}$$

Before 1550 and after 2150 it has been preferred to tabulate the value of this expression with only two decimals of the day at intervals of 20 years. It should be noted that the negative years are astronomical, not chronological. The constant $24^d.2$, applied in the formula to render its value always positive, fails to accomplish this in the earlier portion of the period embraced by the table. It was adopted for use in

the period 1750-1900. It was thought best not to change it, as this would necessitate a change in some of the remaining tables. For the period 1550-2150, II is employed as the argument.

Table IX contains the terms

$$\begin{aligned}\delta z = & 6.2 + 3.50470 \sin (2g' - g - 24.69832t + 181.25.45.0) \\ & + 5.67852 \sin (4g' - 2g - 49.39664t + 277.23.46.9) \\ & + 0.02773 \sin (6g' - 3g - 74.09496t + 157.20.7) \\ & + 0.01235 \sin (8g' - 4g - 98.793t + 14.35.9) \\ & + 0.00107 \sin (10g' - 5g - 123.492t + 59.45) \\ & + 0.00011 \sin (12g' - 6g - 148.19t + 103.13).\end{aligned}$$

Table X contains the terms

$$\begin{aligned}\delta z = & 0.3 + 0.05977 \sin (g' - g + 189.35.5) + 0.26600 \sin (2g' - 2g + 156.58.15) \\ & + 0.05410 \sin (3g' - 3g + 234.23.1) + 0.01587 \sin (4g' - 4g + 312.8.6) \\ & + 0.00548 \sin (5g' - 5g + 29.42) + 0.00209 \sin (6g' - 6g + 106.44) \\ & + 0.00082 \sin (7g' - 7g + 183.15) + 0.00034 \sin (8g' - 8g + 260.19) \\ & + 0.00014 \sin (9g' - 9g + 336) + 0.00006 \sin (10g' - 10g + 50) \\ & + 0.00003 \sin (11g' - 11g + 125) + 0.00001 \sin (12g' - 12g + 195).\end{aligned}$$

Table XI contains the terms

$$\begin{aligned}\delta z = & 0.3 + 0.27834 \sin (3g' - g - 50.994t + 121.13.45.0) \\ & + 0.01428 \sin (6g' - 2g - 101.988t + 255.17.3).\end{aligned}$$

Table XII contains the terms

$$\begin{aligned}\delta z = & 0.25 + 0.21710 \sin (3g' - 2g - 69.947t + 135.33.9) \\ & + 0.00575 \sin (6g' - 4g - 139.894t + 249.33) \\ & + 0.00039 \sin (9g' - 6g - 210t + 199.40) \\ & + 0.00009 \sin (12g' - 8g - 280t + 325).\end{aligned}$$

Table XIII contains the terms

$$\begin{aligned}\delta z = & 0.20 + 0.19196 \sin (3g'' - 2g' + 119.19.8) + 0.00045 \sin (6g'' - 4g' + 61.29) \\ & + 0.00001 \sin (9g'' - 6g' + 177).\end{aligned}$$

Table XIV contains the terms

$$\begin{aligned} \delta z = & 0.20 + 0.06604 \sin (g'' - g' + 79^\circ 2.1') + 0.10175 \sin (2g'' - 2g' + 336^\circ 43.3') \\ & + 0.01128 \sin (3g'' - 3g' + 66^\circ 35') + 0.00211 \sin (4g'' - 4g' + 129^\circ 39') \\ & + 0.00059 \sin (5g'' - 5g' + 207^\circ 39') + 0.00019 \sin (6g'' - 6g' + 284^\circ 39') \\ & + 0.00007 \sin (7g'' - 7g' + 1^\circ 22') + 0.00002 \sin (8g'' - 8g' + 77^\circ) \\ & + 0.00001 \sin (9g'' - 9g' + 153^\circ). \end{aligned}$$

Table XV contains the terms

$$\begin{aligned} \delta z = & 0.11 + 0.10041 \sin (-g + 21.41t + 86^\circ 45' 58'') \\ & + 0.00136 \sin (-2g + 42.82t + 114^\circ 12') \\ & + 0.00024 \sin (-3g + 64.23t + 335^\circ) \\ & + 0.00001 \sin (-4g + 85.64t + 291^\circ). \end{aligned}$$

Table XVI contains the terms

$$\delta z = 0.08 + 0.07330 \sin (9g' - 4g - 122.778t + 163^\circ 42.4').$$

Table XVII contains the terms

$$\begin{aligned} \delta z = & 0.08 + 0.06313 \sin (2g'' - g' - 17.656t + 354^\circ 17.1') \\ & + 0.00749 \sin (4g'' - 2g' - 35^\circ t + 83^\circ 39') \\ & + 0.00200 \sin (6g'' - 3g' - 53^\circ t + 124^\circ 25') \\ & + 0.00009 \sin (8g'' - 4g' - 71^\circ t + 347^\circ). \end{aligned}$$

Table XVIII contains the terms

$$\begin{aligned} \delta z = & 0.04 + 0.03820 \sin (4g' - 3g - 29.363t - 203^\circ 15.6') \\ & + 0.00077 \sin (8g' - 6g - 59^\circ t + 50^\circ 55'). \end{aligned}$$

Table XIX contains the terms

$$\begin{aligned} \delta z = & 0.03 + 0.02699 \sin (5g' - 3g - 56.937t + 174^\circ 37.4') \\ & + 0.00043 \sin (10g' - 6g - 114^\circ t + 169^\circ 12'). \end{aligned}$$

Table XX contains the terms

$$\delta z = 0.02 + 0.01549 \sin (5g' - 2g - 3g'' - 25.28t + 208^\circ 34').$$

Table XXI contains the terms

$$\begin{aligned} \delta z = & 0.03 + 0.02296 \sin (g' - 2g + 250^\circ 7.7') + 0.00017 \sin (2g' - 4g + 25^\circ) \\ & + 0.00002 \sin (3g' - 6g + 194^\circ). \end{aligned}$$

Table XXII contains the terms

$$\delta z = 0^d.0006 + 0^d.00055 \sin (\oplus - \text{ }^{\circ} \text{ }^{\circ}).$$

Table XXIII contains the terms

$$\delta z = 0^d.0003 + 0^d.00032 \sin (\text{ }^{\circ} \text{ }^{\circ} - \text{ }^{\circ} \text{ }^{\circ}).$$

The two preceding tables are arranged in such a way that no interpolation is necessary.

This exhausts the terms it is deemed necessary to tabulate in tables to single entry. The remainder, being quite small, will be tabulated in tables to double entry. Tables XXIV, XXX, XXXII, and XXXIV are connected. To explain their construction I make the following designations. All terms having only a single unit for their coefficients are neglected.

In units of the 5th decimal of the day.

$$\begin{aligned} X_0 = & + 5 \sin (-4g' - g + 21) + 5 \sin (-3g' - g + 76) + 162 \sin (-2g' - g + 165.8) \\ & + 301 \sin (-g' - g + 141.8) + 638 \Delta m \sin (2g' - g + 216.0) + 84 \sin (4g' - g + 90.5) \\ & + 36 \sin (5g' - g + 159.5) + 2 \sin (6g' - g + 124) + 2 \sin (7g' - g + 257) \\ & + 3 \sin (-2g' - 2g + 141) + 63 \sin (-g' - 2g + 244.4) + 549 \Delta m \sin (4g' - 2g + 97.5) \\ & + 489 \Delta m \sin (6g' - 2g + 124.4) + 28 \sin (7g' - 2g + 323.1) + 5 \sin (8g' - 2g + 339) \\ & + 3 \sin (-g' - 3g + 208) + 115 \sin (g' - 3g + 269.5) + 158 \sin (2g' - 3g + 142.9) \\ & + 7 \Delta m \sin (6g' - 3g + 149) + 9 \sin (g' - 4g + 22) + 102 \sin (3g' - 4g + 205.3) \\ & + 1072 \sin (5g' - 4g + 281.50') + 311 \sin (7g' - 4g + 41.8) + 3 \Delta m \sin (8g' - 4g + 225) \\ & + 5 \sin (2g' - 5g + 115) + 9 \sin (3g' - 5g + 106) + 57 \sin (4g' - 5g + 280.9) \\ & + 398 \sin (6g' - 5g + 0.1) + 182 \sin (7g' - 5g + 332.2) + 99 \sin (8g' - 5g + 121.5) \\ & + 120 \sin (9g' - 5g + 90.1) + 175 \sin (11g' - 5g + 39.6) + 5 \sin (4g' - 6g + 200) \\ & + 32 \sin (5g' - 6g + 356.2) + 166 \sin (7g' - 6g + 78.5) + 21 \sin (11g' - 6g + 135.1) \\ & + 2 \sin (5g' - 7g + 298) + 17 \sin (6g' - 7g + 72.6) + 72 \sin (8g' - 7g + 156.4) \\ & + 37 \sin (9g' - 7g + 130.1) + 14 \sin (10g' - 7g + 275.1) + 19 \sin (11g' - 7g + 242.4) \\ & + 8 \sin (12g' - 7g + 219) + 2 \sin (6g' - 8g + 25) + 9 \sin (7g' - 8g + 152) \\ & + 33 \sin (9g' - 8g + 233.9) + 19 \sin (10g' - 8g + 205.6) + 6 \sin (11g' - 8g + 352) \\ & + 5 \sin (8g' - 9g + 227) + 16 \sin (10g' - 9g + 313) + 9 \sin (11g' - 9g + 286) \\ & + 3 \sin (9g' - 10g + 302) + 8 \sin (11g' - 10g + 29) + 5 \sin (12g' - 10g + 2) \\ & + 4 \sin (12g' - 11g + 106) \end{aligned}$$

In units of the 6th decimal of the day.

$$\begin{aligned}
 X_1 = & + 19 \sin (-2g' - g + 264.6) + 43 \sin (-g' - g + 228.8) + 191 \sin (-g + 268.2) \\
 & + 725 \sin (g' - g + 303.65) + 22 \Delta m \sin (2g' - g + 26) + 3 \sin (3g' - g + 288) \\
 & + 79 \sin (4g' - g + 16.6) + 8 \sin (5g' - g + 29) + 8 \sin (-g' - 2g + 342) \\
 & + 8 \sin (-2g + 346) + 94 \sin (g' - 2g + 289.9) + 38 \sin (2g' - 2g + 8.0) \\
 & + 145 \sin (3g' - 2g + 335.5) + 39 \Delta m \sin (4g' - 2g + 7.5) + 71 \Delta m \sin (6g' - 2g + 34.4) \\
 & + 198 \sin (7g' - 2g + 125.5) + 10 \sin (8g' - 2g + 125) + 4 \sin (g' - 3g + 348) \\
 & + 5 \sin (2g' - 3g + 345) + 5 \sin (3g' - 3g + 357) + 17 \sin (4g' - 3g + 23) \\
 & + 26 \sin (5g' - 3g + 355) + 66 \sin (6g' - 3g + 14.9) + 47 \sin (5g' - 4g + 185.1) \\
 & + 66 \sin (6g' - 4g + 344.3) + 33 \sin (7g' - 4g + 300.2) + 27 \sin (8g' - 4g + 225) \\
 & + 139 \sin (9g' - 4g + 343.7) + 49 \sin (11g' - 4g + 13.9) + 18 \sin (6g' - 5g + 263.7) \\
 & + 15 \sin (7g' - 5g + 237.3) + 13 \sin (8g' - 5g + 22.1) + 17 \sin (9g' - 5g + 355.2) \\
 & + 2 \sin (10g' - 5g + 180) + 41 \sin (11g' - 5g + 300.3) + 7 \sin (7g' - 6g + 346) \\
 & + 5 \sin (9g' - 6g + 105) + 4 \sin (10g' - 6g + 270) + 2 \sin (11g' - 6g + 39) \\
 & + 3 \sin (8g' - 7g + 60) + 3 \sin (9g' - 7g + 34) + 3 \sin (10g' - 7g + 177) \\
 & + 3 \sin (11g' - 7g + 153)
 \end{aligned}$$

In units of the 7th decimal of the day.

$$\begin{aligned}
 X_2 = & + 5 \sin (-g + 313) + 9 \sin (g' - g + 294) + 95 \sin (2g' - g + 292.5) \\
 & + 64 \sin (3g' - g + 52.6) + 7 \sin (4g' - g + 306) + 33 \sin (3g' - 2g + 178.3) \\
 & + 371 \sin (4g' - 2g + 254.8) + 121 \sin (6g' - 2g + 257.6) + 25 \sin (7g' - 2g + 15.7) \\
 & + 2 \sin (5g' - 3g + 243) + 6 \sin (6g' - 3g + 302) + 11 \sin (6g' - 4g + 248) \\
 & + 10 \sin (8g' - 4g + 248) + 33 \sin (9g' - 4g + 197.9) + 3 \sin (11g' - 4g + 275)
 \end{aligned}$$

The quantity Δm in these expressions equals $\frac{\text{Arg. I} - 8476^{\text{d}}.9}{10759^{\text{d}}.2}$; it has been introduced by the modifications rendered necessary by tabulating in Tables XXVIII and XXIX a portion of the terms of δz with the Args. III and V.

Then Table XXIV contains the terms

$$\delta z = 0^{\text{d}}.0391 + X_0 + X_1 \Delta m + X_2 (\Delta m)^2$$

Table XXX contains the terms (to be multiplied by m_0)

$$0^{\text{d}}.00140 + X_1 + 2 X_2 \Delta m.$$

Table XXXIII contains the terms (to be multiplied by m_0^2)

$$0^{\text{d}}.000065 + X_2.$$

In like manner Tables XXV and XXXI contain the residual terms of δz produced by the action of Uranus. If we put

In units of the 5th decimal of the day.

$$\begin{aligned} X_0 = & + 17 \sin (g'' + g' + 179.2) + 761 \sin (g'' + 145.75) + 126 \sin (g'' - 2g' + 99.4) \\ & + 3 \sin (g'' - 3g' + 97) + 94 \sin (2g'' + 139.6) + 193 \sin (2g'' - 3g' + 330.4) \\ & + 6 \sin (2g'' - 4g' + 330) + 50 \sin (3g'' + 306.6) + 36 \sin (3g'' - 4g' + 50.1) \\ & + 45 \sin (4g'' - g' + 288.4) + 578 \sin (4g'' - 3g' + 18.1) + 12 \sin (4g'' - 5g' + 111) \\ & + 3 \sin (5g'' - g' + 242) + 244 \sin (5g'' - 2g' + 48.1) + 353 \sin (5g'' - 3g' + 341.1) \\ & + 116 \sin (5g'' - 4g' + 92.9) + 5 \sin (5g'' - 6g' + 187) + 36 \sin (6g'' - 5g' + 172.2) \\ & + 2 \sin (6g'' - 7g' + 263) + 13 \sin (7g'' - 3g' + 89.3) + 16 \sin (7g'' - 4g' + 22.2) \\ & + 13 \sin (7g'' - 5g' + 135.5) + 13 \sin (7g'' - 6g' + 250.5) + 6 \sin (8g'' - 3g' + 53) \\ & + 4 \sin (8g'' - 5g' + 98) + 5 \sin (8g'' - 6g' + 214) + 5 \sin (8g'' - 7g' + 328) \\ & + 3 \sin (9g'' - 4g' + 131) + 2 \sin (9g'' - 7g' + 290) + 2 \sin (9g'' - 8g' + 45). \end{aligned}$$

In units of the 6th decimal of the day.

$$\begin{aligned} X_1 = & + 3 \sin (g'' + g' + 20) + 27 \sin (g'' + 322.8) + 5 \sin (g'' - g' + 281) \\ & + 17 \sin (g'' - 2g' + 201.6) + 11 \sin (2g'' + 246.6) + 175 \sin (2g'' - g' + 174.3) \\ & + 13 \sin (2g'' - 2g' + 113.1) + 27 \sin (2g'' - 3g' + 98.7) + 46 \sin (3g'' + 200.1) \\ & + 348 \sin (3g'' - 2g' + 307.8) + 47 \sin (3g'' - 3g' + 246.0) + 4 \sin (3g'' - 4g' + 203) \\ & + 48 \sin (4g'' - 2g' + 214.0) + 13 \sin (4g'' - 3g' + 203.3) + 2 \sin (4g'' - 4g' + 148) \\ & + 16 \sin (5g'' - 2g' + 231.5) + 15 \sin (5g'' - 3g' + 164.7) + 19 \sin (6g'' - 3g' + 254) \\ & + 2 \sin (6g'' - 4g' + 245). \end{aligned}$$

Then Table XXV contains the terms

$$\delta z = 0^d.02 + X_0 + X_1 \Delta m.$$

Table XXXI contains the terms (to be multiplied by m_0)

$$0^d.00060 + X_1.$$

Table XXVI contains all the periodic terms of δz due to the action of Neptune—that is, all depending on g''' . The expression for them can be readily taken from p. 170. The constant added to this table is $0^d.03$.

Table XXVIII contains the terms (to be multiplied by m_0)

$$\begin{aligned} & 0^d.011200 + 0.006385 \sin (2g' - g - 24.698t + 1557.8) \\ & + 0.005500 \sin (4g' - 2g - 49.397t + 9727.3) \\ & + 0.000066 \sin (6g' - 3g - 74.095t + 14.9) \\ & + 0.000027 \sin (8g' - 4g - 98.79t + 225) \\ & + 0.000002 \sin (10g' - 5g - 123.49t + 180). \end{aligned}$$

Table XXIX contains the terms (to be multiplied by m_0)

$$\begin{aligned} &0^d.004900 + 0^d.000003 \sin (3g' - g - 50''.994t + 288^\circ) \\ &+ 0^d.004888 \sin (6g' - 2g - 101''.988t + 124^\circ 25'.9). \end{aligned}$$

This completes the description of the tables which give the inequalities of the Fundamental Argument. The sum of the quantities, taken from the twenty tables, VII-XXVI, is to be applied directly to Arg. I. It will be seen that the sum of the constants added in these tables, to render the quantities tabulated always positive, is precisely equal to the $32^d.28$ subtracted from Arg. I. Next the sum of the quantities (all in units of the 5th decimal of the day) taken from the five tables XXVII-XXXI, after being multiplied by the positive or negative integer m_0 , is also to be applied to Arg. I. It will be seen that the sum of the constants, positive and negative, which we have applied in these, is 0, as it should be. Then the sum of the quantities (all in units of the 6th decimal of the day) taken from the two tables, XXXII and XXXIII, after multiplication by m_0^2 , must also be added to Arg. I. It will be seen that the sum of the constants applied in these tables vanishes. In fine, the quantity (in units of the 7th decimal of the day) taken from Table XXXIV, after multiplication by m_0^3 , must be added to Arg. I. The result is the value of the Fundamental Argument to be used in some of the following tables.

Table XXXV contains the sum of the true anomaly and the reduction to the ecliptic of a planet moving according to the elliptic theory, and having the elements stated at the beginning of this explanation. The argument is the number of days elapsed since the last perihelion passage. The formulæ used to compute this table are

$$\begin{aligned} f &= nz + 23117''.641 \sin nz + 809''.380 \sin 2nz + 39''.293 \sin 3z + 2''.180 \sin 4nz \\ &+ 0''.130 \sin 5nz + 0''.008 \sin 6nz, \\ R &= 97''.774 \sin (2f + 135^\circ 31' 44''.9) + 0''.023 \sin (4f' + 271^\circ.1). \end{aligned}$$

The quantity $f+R$ is tabulated at intervals of 8 days, the argument increasing by 8 days in passing horizontally to the right from one column to the next. For the sake of facilitating interpolation in this table, there is added in a column to the right the common logarithm of the rate of motion per day of the argument in seconds of arc (the characteristic, always 2, is not written).

The heliocentric longitude of Saturn, referred to the mean equinox and ecliptic of date, is then the sum of $\pi + 50''.258141$, derived from Tables I and IV, and $f+R$ from this table.

Tables XXXVI-LIX are concerned with the common logarithm of the radius vector. The inequalities of this quantity are given in units of the 7th decimal. If we put

$$\begin{aligned} X_0 &= 250.0 + 187.4 \cos (g' + 295^\circ 24' 7'') + 49.9 \cos (2g' + 293^\circ 9') \\ &+ 14.2 \cos (3g' + 271^\circ 43') + 0.6 \cos (4g' + 311^\circ) \\ X_1 &= + 12.37 + 834.91 \cos (g' + 57^\circ 58' 50'') + 23.17 \cos (2g' + 58^\circ 38.0') \\ &+ 0.62 \cos (3g' + 77.8^\circ) + 0.01 \cos (4g' + 82^\circ) \\ X_2 &= + 0.058 + 1.571 \cos (g' + 322^\circ 22.6') + 0.159 \cos (2g' + 303.2^\circ) \\ &+ 0.011 \cos (3g' + 303^\circ) + 0.001 \cos (4g' + 299^\circ) \end{aligned}$$

Table XXXVI contains the terms

$$X_0 + X_1 \Delta m + X_2 (\Delta m)^2,$$

and Table LV contains the terms (to be multiplied by m_0)

$$-16.6 + X_1 + 2 X_2 \Delta m,$$

and Table LVIII contains the terms (to be multiplied by m_0^2)

$$-0.08 + X_2.$$

Table XXXVII contains the terms to long period

$$\begin{aligned} & 1200.0 + [1141.6 - 1.28m] \cos(5g' - 2g - 88''.928t + 62^\circ 49' 33'') \\ & + 0.006m^2 \cos(5g' - 2g - 89t + 6^\circ 8') \\ & + [11.0 - 0.13m] \cos(10g' - 4g - 339''.3t + 306^\circ 25') \\ & + 0.013m^2 \cos(10g' - 4g - 339''t + 308^\circ) \\ & + [35.1 - 0.06m] \cos(2g'' - g' - 11''.867t + 350^\circ 35') \\ & + 26.1 \cos(3g'' - g' + 137^\circ 55') + 0.05m \cos(3g'' - g' + 355^\circ) \\ & + 8.3 \cos(6g' - 2g - 3g'' + 2^\circ 4') + 0.06m \cos(5g' - 2g - 3g'' \\ & - 25''.33t + 28^\circ 34'). \end{aligned}$$

Table XXXVIII contains the terms

$$\begin{aligned} & 8600.0 + 2443.3 \cos(2g' - g - 24.698t + 176^\circ 2' 38'') \\ & + 7005.4 \cos(4g' - 2g - 49.397t + 277^\circ 15' 22'') \\ & + 17.3 \cos(6g' - 3g - 74.095t + 178^\circ 3') \\ & + 21.5 \cos(8g' - 4g - 99t + 155^\circ 2') \\ & + 2.7 \cos(10g' - 5g - 123t + 63^\circ 43') \\ & + 0.1 \cos(12g' - 6g - 148t + 120^\circ) \end{aligned}$$

Table XXXIX contains the terms

$$\begin{aligned} & 3300.0 + 3782.7 \cos(g' - g + 79.45^\circ 10') + 643.8 \cos(2g' - 2g + 156^\circ 34.6') \\ & + 147.2 \cos(3g' - 3g + 233^\circ 56.1') + 44.5 \cos(4g' - 4g + 311^\circ 30') \\ & + 15.6 \cos(5g' - 5g + 28^\circ 45') + 5.9 \cos(6g' - 6g + 105^\circ 37') \\ & + 2.4 \cos(7g' - 7g + 182^\circ 5') + 1.0 \cos(8g' - 8g + 258^\circ) \\ & + 0.4 \cos(9g' - 9g + 333^\circ) + 0.2 \cos(10g' - 10g + 48^\circ) \\ & + 0.1 \cos(11g' - 11g + 122^\circ). \end{aligned}$$

Table XL contains the terms

$$260.0 + 241.3 \cos (3g' - g - 50.994t + 305.54.4) + 18.3 \cos (6g' - 2g - 102t + 77.17) \\ + 0.7 \cos (9g' - 3g - 153t + 275^\circ).$$

Table XLI contains the terms

$$440.0 + 421.1 \cos (3g' - 2g - 69.947t + 141.57.9) + 14.9 \cos (6g' - 4g - 140t + 259.21) \\ + 1.0 \cos (9g' - 6g - 210t + 191.57) + 0.2 \cos (12g' - 8g - 280t + 325).$$

Table XLII contains the terms

$$240.0 + 235.0 \cos (3g'' - 2g' + 119^\circ 5'.6) + 0.8 \cos (6g'' - 4g' + 65^\circ 50').$$

Table XLIII contains the terms

$$200.0 + 58.4 \cos (g'' - g' + 79.3) + 152.6 \cos (2g'' - 2g' + 336.43.3) \\ + 21.9 \cos (3g'' - 3g' + 69.58) + 4.4 \cos (4g'' - 4g' + 128.12) \\ + 1.3 \cos (5g'' - 5g' + 206.15) + 0.4 \cos (6g'' - 6g' + 283) \\ + 0.2 \cos (7g'' - 7g' + 359) + 0.1 \cos (8g'' - 8g' + 75)$$

Table XLIV contains the terms

$$80.0 + 82.0 \cos (-g + 21.41t + 110.49) + 3.7 \cos (-2g + 43t + 210.18) \\ + 0.8 \cos (-3g + 64t + 319) + 0.1 \cos (-4g + 86t + 298)$$

Table XLV contains the terms

$$100.0 + 93.1 \cos (9g' - 4g - 122''.778t + 163^\circ 39').$$

Table XLVI contains the terms

$$100.0 + 102.1 \cos (4g' - 3g - 29''.363t + 206^\circ 23'.9) + 2.4 \cos (8g' - 6g - 59''t + 56^\circ 33').$$

Table XLVII contains the terms

$$65.0 + 59.7 \cos (5g' - 3g - 56''.937t + 177^\circ 52') + 1.3 \cos (10g' - 6g - 114''t + 171^\circ 26').$$

Table XLVIII contains the terms

$$20.0 + 19.6 \cos (5g' - 2g - 3g'' - 25''.28t + 208^\circ 24').$$

Table XLIX contains the terms

$$56.0 + 55.2 \cos (g' - 2g + 98^\circ 52') + 0.5 \cos (2g' - 4g + 17^\circ) + 0.1 \cos (3g' - 6g + 191^\circ).$$

Table L contains the terms

$$1.0 + 1.4 \cos (\oplus - \mathfrak{h}).$$

Table LI contains the terms

$$1.0 + 0.8 \cos (\mathfrak{z} - \mathfrak{h}).$$

If we put

$$\begin{aligned} X_0 = & + 0.2 \cos(-3g' - g + 111) + 4.6 \cos(-2g' - g + 165.4) + 10.4 \cos(-g' - g + 140.6) \\ & + 35.1 \cos(4g' - g + 342.6) + 0.7 \cos(5g' - g + 309) + 1.8 \cos(-g' - 2g + 241) \\ & + 0.6 \cos(7g' - 2g + 114) + 1.0 \cos(g' - 3g + 46) + 5.3 \cos(2g' - 3g + 178.6) \\ & + 34.6 \cos(7g' - 3g + 32.6) + 4.9 \cos(8g' - 3g + 210.4) + 0.4 \cos(g' - 4g + 43) \\ & + 2.8 \cos(3g' - 4g + 229.7) + 31.5 \cos(5g' - 4g + 285.0) + 8.1 \cos(7g' - 4g + 37.1) \\ & + 0.2 \cos(11g' - 4g + 102) + 0.2 \cos(2g' - 5g + 113) + 0.2 \cos(3g' - 5g + 106) \\ & + 1.5 \cos(4g' - 5g + 296.6) + 11.9 \cos(6g' - 5g + 3.1) + 5.5 \cos(7g' - 5g + 337.5) \\ & + 2.7 \cos(8g' - 5g + 116.1) + 3.7 \cos(9g' - 5g + 118.4) + 3.6 \cos(11g' - 5g + 36.4) \\ & + 0.7 \cos(12g' - 5g + 263) + 0.8 \cos(5g' - 6g + 8) + 5.0 \cos(7g' - 6g + 80.1) \\ & + 0.7 \cos(11g' - 6g + 144) + 0.4 \cos(6g' - 7g + 83) + 2.2 \cos(8g' - 7g + 158.8) \\ & + 1.1 \cos(9g' - 7g + 135.1) + 0.4 \cos(10g' - 7g + 265) + 0.6 \cos(11g' - 7g + 247) \\ & + 0.3 \cos(12g' - 7g + 222) + 0.2 \cos(7g' - 8g + 158) + 1.0 \cos(9g' - 8g + 236) \\ & + 0.6 \cos(10g' - 8g + 214) + 0.5 \cos(10g' - 9g + 313) + 0.3 \cos(11g' - 9g + 293) \\ & + 0.2 \cos(11g' - 10g + 29) + 0.2 \cos(12g' - 10g + 8), \end{aligned}$$

$$\begin{aligned} X_1 = & + 0.07 \cos(-2g' - g + 263.7) + 0.10 \cos(-g' - g + 235.3) + 0.13 \cos(-g' - g + 258.2) \\ & + 0.94 \cos(g' - g + 304.8) + 5.04 \cos(2g' - g + 218.95) + 0.27 \cos(3g' - g + 13.7) \\ & + 0.13 \cos(4g' - g + 126.9) + 0.02 \cos(5g' - g + 214) + 0.03 \cos(-g' - 2g + 341) \\ & + 0.08 \cos(g' - 2g + 257.3) + 0.10 \cos(2g' - 2g + 14.1) + 0.93 \cos(3g' - 2g + 250.2) \\ & + 6.67 \cos(4g' - 2g + 100.47) + 5.53 \cos(6g' - 2g + 304.37) + 0.31 \cos(7g' - 2g + 306.9) \\ & + 0.02 \cos(8g' - 2g + 307) + 0.02 \cos(2g' - 3g + 342) + 0.07 \cos(4g' - 3g + 0) \\ & + 0.09 \cos(5g' - 3g + 23) + 0.70 \cos(6g' - 3g + 42.8) + 0.71 \cos(7g' - 3g + 340.7) \\ & + 0.11 \cos(8g' - 3g + 153.8) + 0.12 \cos(5g' - 4g + 184.4) + 0.20 \cos(6g' - 4g + 354.9) \\ & + 0.15 \cos(7g' - 4g + 302.8) + 0.04 \cos(8g' - 4g + 119) + 0.91 \cos(9g' - 4g + 55.6) \\ & + 0.05 \cos(6g' - 5g + 263) + 0.04 \cos(7g' - 5g + 240) + 0.05 \cos(8g' - 5g + 24) \\ & + 0.06 \cos(9g' - 5g + 354) + 0.08 \cos(11g' - 5g + 300) + 0.02 \cos(12g' - 5g + 113) \\ & + 0.02 \cos(7g' - 6g + 341), \end{aligned}$$

$$\begin{aligned} X_2 = & + 0.001 \cos(-g' - g + 305) + 0.001 \cos(g' - g + 25) + 0.012 \cos(2g' - g + 93.9) \\ & + 0.006 \cos(3g' - g + 258) + 0.001 \cos(4g' - g + 134) + 0.017 \cos(3g' - 2g + 138) \\ & + 0.042 \cos(4g' - 2g + 32.5) + 0.004 \cos(6g' - 2g + 182) + 0.001 \cos(7g' - 2g + 185) \\ & + 0.004 \cos(6g' - 3g + 303) + 0.005 \cos(9g' - 4g + 190.1), \end{aligned}$$

Table LII contains the terms

$$140.0 + X_0 + X_1 \Delta m + X_2 (\Delta m)^2,$$

Table LVI contains the terms (to be multiplied by m_0)

$$16.00 + X_1 + 2X_2 \Delta m,$$

Table LIX contains the terms (to be multiplied by m_0^2)

$$0.080 + X_2.$$

If we put

$$\begin{aligned} X_0 = & +0.3 \cos(g'' + g' + 356) + 3.2 \cos(g'' + 345.0) + 2.5 \cos(g'' - 2g' + 95.9) \\ & + 1.0 \cos(2g'' + 328.1) + 5.2 \cos(2g'' - 3g' + 332.2) + 0.2 \cos(2g'' - 4g' + 332) \\ & + 0.6 \cos(3g'' + 126) + 1.1 \cos(3g'' - 4g' + 57.2) + 0.4 \cos(4g'' - g' + 104) \\ & + 6.6 \cos(4g'' - 2g' + 80.1) + 9.6 \cos(4g'' - 3g' + 19.8) + 0.3 \cos(4g'' - 5g' + 115) \\ & + 1.1 \cos(5g'' - 2g' + 38.5) + 5.1 \cos(5g'' - 3g' + 342.4) + 2.2 \cos(5g'' - 4g' + 94.0) \\ & + 0.2 \cos(6g'' - 2g' + 172) + 2.4 \cos(6g'' - 3g' + 123.4) + 0.7 \cos(6g'' - 5g' + 173.8) \\ & + 0.3 \cos(7g'' - 4g' + 26) + 0.3 \cos(7g'' - 5g' + 139) + 0.3 \cos(7g'' - 6g' + 252), \\ X_1 = & +0.02 \cos(g'' + 140) + 0.02 \cos(g'' - 2g' + 202) + 0.02 \cos(2g'' + 59) \\ & + 0.01 \cos(2g'' - 2g' + 106) + 0.03 \cos(2g'' - 3g' + 98) + 0.05 \cos(3g'' + 21) \\ & + 0.42 \cos(3g'' - 2g' + 308) + 0.05 \cos(3g'' - 3g' + 252) + 0.01 \cos(3g'' - 4g' + 211) \\ & + 0.03 \cos(4g'' - 2g' + 266) + 0.02 \cos(4g'' - 3g' + 202) + 0.01 \cos(5g'' - 2g' + 225) \\ & + 0.02 \cos(5g'' - 3g' + 166) + 0.01 \cos(6g'' - 3g' + 307), \end{aligned}$$

Table LIII contains the terms

$$32.0 + X_0 + X_1 \Delta m,$$

Table LVII contains the terms (to be multiplied by m_0)

$$0.60 + X_1.$$

Table LIV contains all the periodic perturbations of the logarithm of the radius vector due to the action of Neptune. The expression for them can be found on p. 172. The constant added is 40.0.

Table LX contains the principal term of the logarithm of the radius vector. It has been computed from the values of f derived in constructing Table XXXV, by means of the formula

$$\log r = \log a + \log(1 - e^2) - \log(1 + e \cos f).$$

The sum of all the constants applied in the nineteen tables, XXXVI–LIV, to render the tabulated quantities constantly positive is 15125.0. But $\log r$ itself contains the constant term 1826.0. Thus we ought to subtract the constant 0.0013299 from the values of $\log r$, and the formula for Table LX becomes

$$\log r = 0.97679886 - \log(1 + e \cos f).$$

The arrangement of this table is the same as that of Table XXXV, except that, the rates of motion of the given quantity changing sign, it has been preferred to tabulate the rate itself instead of its logarithm.

The logarithm of the radius vector of Saturn is then equivalent to the sum of the quantities taken from Tables XXXVI-LIV and LX, plus the sum of those taken from Tables LV-LVII after it has been multiplied by m_0 , plus the sum of those taken from Tables LVIII and LIX after it has been multiplied by m_0^2 . It will be seen that the sum of the constants positive and negative, applied to each of the last two groups of tables, accurately vanishes in both cases. The terms multiplied by m_0^3 have not been tabulated, as, in sum, they scarcely amount to a single unit in the degree of approximation we adopt.

Tables LXI-LXX are concerned with the latitude. And specially:

Table LXI contains the terms

$$\begin{aligned} & 10''.62 + 2.906 \sin (2g' - g - 24.6983t + 225^\circ 28.5) \\ & + 8.658 \sin (4g' - 2g - 49.3966t + 277^\circ 44.3) \\ & + 0.096 \sin (6g' - 3g - 74.09^\circ t + 155^\circ 49) \\ & + 0.002 \sin (8g' - 4g - 98.8^\circ t + 171) \\ & + 0.002 \sin (10g' - 5g - 123.5^\circ t + 247). \end{aligned}$$

Table LXII contains the terms

$$\begin{aligned} & 1''.80 + 1''.804 \sin (-g + 21''.41t + 116^\circ 2') + 0''.063 \sin (-2g + 42''.82t + 91^\circ 47') \\ & + 0''.003 \sin (-3g + 64''.23t + 114^\circ). \end{aligned}$$

If we put

$$\begin{aligned} X_0 = & -0.329 \\ & + 0.204 \sin (2g' + 287.2^\circ) + 0.019 \sin (3g' + 269.^\circ) \\ & + 0.005 \sin (4g' + 51^\circ) + 0.002 \sin (5g' + 331^\circ) + 0.003 \sin (-3g' - g + 209^\circ) \\ & + 0.002 \sin (-2g' - g + 41^\circ) + 0.026 \sin (-g' - g + 37^\circ) + 0.837 \sin (g' - g + 210.77^\circ) \\ & + 0.717 \sin (3g' - g + 185.20^\circ) + 0.057 \sin (4g' - g + 301.5^\circ) + 0.037 \sin (5g' - g + 310.2^\circ) \\ & + 0.002 \sin (-g' - 2g + 81^\circ) + 0.258 \sin (g' - 2g + 12.0^\circ) + 0.116 \sin (2g' - 2g + 319.5^\circ) \\ & + 0.214 \sin (3g' - 2g + 205.5^\circ) + 0.373 \sin (5g' - 2g + 110.9^\circ) + 0.267 \sin (6g' - 2g + 20.1^\circ) \\ & + 0.012 \sin (7g' - 2g + 25^\circ) + 0.007 \sin (g' - 3g + 84^\circ) + 0.087 \sin (2g' - 3g + 89.9^\circ) \\ & + 0.041 \sin (3g' - 3g + 53.2^\circ) + 0.077 \sin (4g' - 3g + 199.7^\circ) + 0.117 \sin (5g' - 3g + 176.1^\circ) \\ & + 0.048 \sin (7g' - 3g + 300.4^\circ) + 0.002 \sin (8g' - 3g + 247^\circ) + 0.003 \sin (2g' - 4g + 139^\circ) \\ & + 0.033 \sin (3g' - 4g + 167.5^\circ) + 0.018 \sin (4g' - 4g + 134.4^\circ) + 0.014 \sin (5g' - 4g + 266.0^\circ) \\ & + 0.013 \sin (6g' - 4g + 246.5^\circ) + 0.011 \sin (7g' - 4g + 230^\circ) + 0.087 \sin (9g' - 4g + 161.8^\circ) \\ & + 0.009 \sin (10g' - 4g + 341^\circ) + 0.002 \sin (11g' - 4g + 273^\circ) + 0.013 \sin (4g' - 5g + 245^\circ) \\ & + 0.009 \sin (5g' - 5g + 214^\circ) + 0.004 \sin (6g' - 5g + 349^\circ) + 0.003 \sin (7g' - 5g + 317^\circ) \\ & + 0.002 \sin (8g' - 5g + 303^\circ) + 0.003 \sin (9g' - 5g + 272^\circ) + 0.002 \sin (11g' - 5g + 219^\circ) \\ & + 0.005 \sin (5g' - 6g + 323^\circ) + 0.004 \sin (6g' - 6g + 292^\circ) + 0.002 \sin (6g' - 7g + 38^\circ) \\ & + 0.002 \sin (7g' - 7g + 9^\circ), \end{aligned}$$

$$\begin{aligned}
 X_1 = & -0.0031 \quad +0.0006 \sin(-g' - g + 311) + 0.0128 \sin(-g + 29.6) \\
 & + 0.0041 \sin(g' - g + 163.2) + 0.0244 \sin(2g' - g + 312.8) + 0.0005 \sin(3g' - g + 276) \\
 & + 0.0003 \sin(-2g + 342) + 0.0008 \sin(g' - 2g + 299) + 0.0002 \sin(2g' - 2g + 90) \\
 & + 0.0016 \sin(3g' - 2g + 197) + 0.0635 \sin(4g' - 2g + 11.25) + 0.0016 \sin(5g' - 2g + 330) \\
 & + 0.0022 \sin(6g' - 2g + 269) + 0.0003 \sin(7g' - 2g + 249) + 0.0003 \sin(9g' - 4g + 250),
 \end{aligned}$$

Table LXIII contains the terms

$$2''.32 + X_0 + X_1 \Delta m.$$

Table LXVI contains the terms (to be multiplied by m_0)

$$+0''.110 + X_1.$$

Table LXIV contains the terms which arise from the action of Uranus—that is, the terms on p. 174 which involve g'' . The constant added is $0''.85$.

Table LXV contains the terms which arise from the action of Neptune—that is, the terms on p. 174 which involve g''' . The constant added is $0''.02$.

From the expression for $\sin \beta'_0$ on p. 174 has been derived the value of β'_0 in powers of m_0 ; thus

$$\beta'_0 = A_0 + A_1 m_0 + A_2 m_0^2 + A_3 m_0^3.$$

The coefficients A_0 , A_1 , A_2 , and A_3 have been tabulated respectively in Tables LXX, LXVI, LXVIII, and LXIX. The argument in all is the Fundamental Argument.

The value of A_0 for Table LXX has been computed by supposing i' and ϖ' to vary. In this way it has been found that for the following equidistant values of the Fundamental Argument

Fund. Arg.	Log. $\sin i'$	$\pi' - \varpi'$.
d.		o ' "
0	8.6388281	- 22 21 27.04
3600	8.6387648	22 18 22.94
7200	8.6387014	22 15 18.82
10800	8.6386379	- 22 12 14.69

The extremely small terms depending on $3f'$ have been taken account of differentially. The table is arranged precisely as Table LX. The constant $15''.61$, equivalent to the sum of the constants added in Tables LXI–LXV, is subtracted from all the quantities of this table.

The quantities A_1 , A_2 , and A_3 have been derived in the following way. Writing $m_0 + \Delta m$ for m , let the equation on p. 174 be stated thus:

$$\sin \beta'_0 = B_0 + B_1 (m_0 + \Delta m) + B_2 (m_0 + \Delta m)^2 + B_3 (m_0 + \Delta m)^3.$$

Then if we put

$$C_1 = B_1 + 2 B_2 \Delta m + 3 B_3 (\Delta m)^2,$$

$$C_2 = B_2 + 3 B_3 \Delta m,$$

$$C_3 = B_3,$$

this equation will take the form

$$\sin \beta'_0 = \sin A_0 + C_1 m_0 + C_2 m_0^2 + C_3 m_0^3.$$

But, by Taylor's Theorem, in terms of the A we have

$$\begin{aligned} \sin \beta'_0 = & \sin A_0 + [A_1 m_0 + A_2 m_0^2 + A_3 m_0^3] \cos A_0 - \frac{1}{2} [A_1^2 m_0^2 + 2 A_1 A_2 m_0^3] \sin A_0 \\ & - \frac{1}{6} A_1^3 m_0^3 \cos A_0. \end{aligned}$$

And, by a comparison of the two expressions,

$$\begin{aligned} A_1 &= C_1 \sec A_0, \\ A_2 &= C_2 \sec A_0 + \frac{1}{2} A_1^2 \tan A_0, \\ A_3 &= C_3 \sec A_0 + A_1 A_2 \tan A_0 + \frac{1}{6} A_1^3. \end{aligned}$$

From the quantities of Table LXVI has been subtracted the constant $0''.110$ added in Table LXVII. No constants have been applied in Tables LXVIII and LXIX.

It must be borne in mind that the argument of the three tables, Tables LXVI, LXVIII, and LXIX, is the Fundamental Argument, and not simply Arg. I. Table LXX also differs from Tables XXXV and LX in this, that while in the latter should the argument surpass the limit of the table, $10759^d.2009$, the period of Arg. I can always be subtracted from it, and entry made in the table with the reduced value; this can not be done in Table LXX unless we employ the same reduced value as the argument in Tables LXVI, LXVIII, and LXIX, and, at the same time, augment *algebraically* m_0 by a unit *especially* for these three tables.

The heliocentric latitude of Saturn referred to the ecliptic of date is then the sum of the ten quantities taken with the proper arguments from Tables LXI-LXX, it being understood that those from Tables LXVI and LXVII are first multiplied by m_0 , that from Table LXVIII by m_0^2 , and that from Table LXIX by m_0^3 .

Table LXXI is a table for obtaining the orbit longitude from the elliptic longitude. In the first place, the value of the longitude of the ascending node of the orbit of Saturn on the ecliptic of date is given for the beginning of every twentieth year from 1600 to 2000 with sufficient approximation for the purpose. The argument for the correction which must be added to the elliptic longitude supposed to have been derived from the preceding table in order to obtain the orbit longitude is obtained by subtracting the longitude of the ascending node corresponding to the given time from the elliptic longitude. Denoting the former by Ω' and the latter by λ' , the formula for the value of this correction at the epoch 1850 is

$$+97''.755 \sin 2 (\lambda' - \Omega') + 0''.023 \sin 4 (\lambda' - \Omega').$$

The augmentation in a century is given by the equation

$$-0''.288 \sin 2 (\lambda' - \Omega').$$

The value of these two quantities is given in the table for every degree of the argument $\lambda' - \Omega'$. The signs which should be attached to the quantities must be taken from the side of them on which lies the argument.

DIRECTIONS FOR THE USE OF THE TABLES.

The given date for which the position of Saturn is desired must be reduced to time of the Greenwich meridian, and expressed in mean solar days and decimals of a day. By means of Table III can be found the number of days which have elapsed since the beginning of the year. If the given date lies between 1750 and 1950, this number of days is added to each of the values of the seventeen arguments designated I to XVII standing in a line with the given year in Table I. Also from Table IV can be obtained the motion of the angle $\pi + ht$ for the same number of days, and this is added to the value standing in a line with the given year in Table I. But if the given date lies without the limits 1750–1950, these additions are made to the correspondent year of the 19th century (1801 to 1900, inclusive), and the changes of the arguments for whole centuries are taken from Table II and also added to the preceding values. The letters J and G in the column of centuries in Table II denote severally the Julian and Gregorian calendars. It will be perceived that two lines are given for 1500; the upper must be used for the Julian calendar and the lower for the Gregorian. The column for Arg. II is vacant before 1500, as this argument is not used before 1550, the actual date in years being used instead. Args. XVI and XVII have no motions given during this period of time, as the inequalities they determine are too small to be worth consideration, on account of the rudeness of observations as well as of the imperfection of the theory.

From the arguments thus found we subtract as many multiples as possible of their periods given in Table VI, and add as many units *algebraically* to m (taken from Tables I and II) as multiples of its period have been subtracted from Arg. I. It may be remarked that the only motive for subtracting the period is to bring the argument within the compass of the tables where it is to be used. Hence, as some margin has always been allowed in the tables, it may not be necessary to subtract the period if the argument exceeds it only by a small quantity. However, in the case of Arg. I, if the period is not subtracted the unit must not be added to m .

We take from Table V with the argument m the values of the three vertical arguments A, B, and C, of the tables of double entry. If m contains only one significant figure, the value is found directly in the middle portion of the table; but if m contains two or more figures, the change in the values for changes of multiples of 10 in m is given in the upper and lower portions of the table, negative multiples being in the upper and positive in the lower. Thus, if $m = -71$, we simply add the numbers corresponding to -70 to those corresponding to -1 . We subtract from the numbers thus obtained as many multiples of their periods given in Table VI as possible.

We have now all the arguments necessary for getting the heliocentric position of Saturn.

Tables VII–XXIII are entered severally with the Args. I–XVII, and the numbers obtained written in a vertical column, for the purpose of being, with other numbers, added together. Tables XXII and XXIII are arranged in such a way as to render interpolation unnecessary. Tables XXIV–XXVI are then entered with Arg. I as the horizontal argument, and severally with the vertical arguments A, B, and C; and the numbers obtained placed in the vertical column just mentioned.

Table XXVII is then entered with Arg. I, Table XXVIII with Arg. III, Table XXIX with Arg. V, Table XXX horizontally with Arg. I and vertically with the argument A, Table XXXI horizontally with Arg. I and vertically with the argument B. The five quantities thus obtained are added together, and the sum multiplied by the positive or negative integer m . The product is put in the column of the quantities obtained from Tables VII–XXVI. In this connection it must be noted that the quantities in the latter tables are given to four decimals of the day, but the quantities in the former to five decimals of the same; hence, a division by 10 should be made before placing the quantity in the column for addition.

Table XXXII is entered with Arg. I and Table XXXIII with Arg. I as the horizontal and A as the vertical argument; the two quantities thus obtained are added, and the sum multiplied by m^2 (which is always a positive integer) and the product placed in the column for addition. As the quantities in Tables XXXII and XXXIII are in units of the sixth decimal of the day, this product should be divided by 100 before being so placed.

In fine, Table XXXIV is entered with Arg. I, and the quantity thus obtained multiplied by m^3 , and the product is referred to the column for addition. As the numbers in Table XXXIV are in units of the seventh decimal of the day, this product should be divided by 1000 before being so referred.

Under all these quantities we write the value of Arg. I. The sum of the 25 quantities is the value of the *Fundamental Argument*. With this we enter Table XXXV. The interpolation in this table is facilitated by the given logarithm of the rate of motion of the quantity tabulated in seconds of arc, and for a change of one day in the argument. This rate belongs to the quantity which stands immediately to the left, and must not be supposed to be an eighth of the difference between two successive values. The characteristic of this logarithm is omitted; it is always 2. The arrangement of the table will be readily understood; the argument increases by 8 days as we move horizontally to the right. It is recommended that the interpolation should be made from the nearer value of the argument, so that the factor multiplying the rate of motion may never exceed 4.

If the value of $\pi + ht$ from Tables I, II, and IV is added to the quantity from Table XXXV, the sum will be the heliocentric longitude of Saturn referred to the mean equinox and ecliptic of date.

Tables XXXVI–LX are concerned with the common logarithm of the radius vector. The inequalities of this quantity tabulated in Tables XXXVI–LIX are in units of the seventh decimal of this logarithm. Taking account of the circumstance that in modern times m may reach the value 10, the quantities which are to be multiplied by this integer have one decimal more in the tabulation, and those which are to be multiplied by its square two decimals more. However, as these are pointed off, no embarrassment will arise from this cause.

We enter Tables XXXVI–LI in succession with the several arguments I–XVII, it being understood that there is no table corresponding to Arg. XI, and write the numbers in a column for the purpose of being, together with others, added. It will be seen that Tables L and LI are arranged so that no interpolation is needed. Tables

LII, LIII, and LIV are then entered with Arg. I as the horizontal argument and severally with A, B, and C as the vertical argument, and the three quantities obtained are placed for addition in the column with those just got. Tables LV–LVII are now entered, the first with Arg. I, the second with Arg. I as the horizontal argument and A as the vertical, the third with the same horizontal argument, but B as the vertical. The sum of the three quantities obtained is multiplied by the integer m , and the product is placed in the column with the quantities from Tables XXXVI–LIV. Tables LVIII and LIX are then entered, the first with Arg. I, the second with Arg. I as the horizontal argument and A as the vertical; the two quantities thus obtained are added, and the sum multiplied by m^2 , and the product placed in the column previously mentioned. In fine, we enter Table LX with the Fundamental Argument, and place the quantity obtained in the same column. The arrangement of this table is the same as that of Table XXXV, except that the rate of motion for a change of one day in the argument is given instead of its logarithm.

The sum of the quantities in the column is the common logarithm of the radius vector of Saturn.

Tables LXI–LXX are concerned with the heliocentric latitude of Saturn. There are two decimals of the second of arc in the tabulated quantities which are not to be multiplied by m or its powers; and three, four, and five for those which are to be multiplied severally by m , m^2 , and m^3 .

We enter Table LXI with Arg. III, Table LXII with Arg. IX, Table LXIII with Arg. I as the horizontal argument and A as the vertical, Table LXIV with the same horizontal argument but with B as the vertical, and Table LXV with the same horizontal argument but with C as the vertical. These five quantities are placed in a column to be, with others, added together. We enter Table LXVI with the Fundamental Argument, and Table LXVII with Arg. I as the horizontal argument and A as the vertical. The two quantities thus obtained are added and their sum multiplied by m ; the product is placed in the column with the five previous quantities. We enter Table LXVIII with the Fundamental Argument, and the product of the quantity obtained by m^2 is placed in this column. Table LXIX is entered with the same argument, and the product of the quantity obtained by m^3 is also placed in this column. In fine, we enter Table LXX with the Fundamental Argument, and the quantity obtained is placed in the column. The arrangement of this table is, in all respects, similar to that of Table LX.

The sum of the quantities in this column is the heliocentric latitude of Saturn referred to the ecliptic of date.

This completes the derivation of the position of Saturn, but if the orbit longitude is wanted Table LXXI furnishes the means of obtaining it. In the first part of this table is found for the beginning of every twentieth year, from 1600 to 2000, the longitude of the ascending node counted from the mean equinox of date. By subtracting the arc, obtained from this table with the date as argument, from the elliptic longitude, is obtained the argument proper for finding the correction, which must be added to the elliptic longitude in order to obtain the orbit longitude. The value got from the column to the left is that which would avail were the epoch 1850. For any other

time this value must be corrected by means of the variation in a century which is given in a column to the right. Care must be taken to read the signs of these two quantities on the same side as the argument.

NOTE I.—It is supposed that the perturbations, which Neptune produces in Saturn, will be obtained with greater accuracy if Tables XXVI and LIV are entered not with Arg. I as the horizontal argument, but with

Arg. I + Equation of Table VIII — $24^d.2$.

The maximum effect of this change in the longitude of Saturn is $0''.06$, and in the logarithm of the radius vector a single unit in the seventh decimal. In strict rigor we ought, at the same time, to add to the argument C the correction (in its own units)

$$-\frac{1}{1000} [\text{Equation of Table VIII} - 24^d.2].$$

The maximum effect of this on the longitude is $0''.017$.

NOTE II.—The exigencies of printing have not always permitted the indication of the decimal value of the figures tabulated in the tables. But, in all cases, equations which are to be added are tabulated to the same number of decimals. The only exceptions are in Tables VIII and XXXVII, where, for dates extraneous to the period 1550–2150, it has been thought sufficient to give two decimals less than for dates within this period. It is recommended that when a position of Saturn is computed for a date without the mentioned period two decimals should be cut off from the equations obtained from the other tables—that is, that we be content with seconds instead of hundredths of a second.

NOTE III.—In making the multiplications by m , m^2 , and m^3 , regard must be had to the signs of both factors. The multiplication is *algebraical*.

First Example.—Calculation of the position of Saturn for 1894, March 6, Greenwich mean noon.

Desig. of Arg.	Value of Arg.	Table.	Fund. Arg.	Table.	Log Radius.	Table.	Latitude.
I	3004 ^d .5545	VII	2351	XXXVI	738		
II	125896	VIII	6.0581	XXXVII	529	LXI	4".47
III	16136.00	IX	2549	XXXVIII	7092		
IV	1629.1	X	143	XXXIX	653		
V	16136	XI	4334	XL	45		
VI	5203.1	XII	2027	XLI	873		
VII	4788	XIII	3633	XLII	364		
VIII	16136	XIV	1390	XLIII	147		
IX	5135.7	XV	1725	XLIV	116	LXII	3.46
X	4642	XVI	690	XLV	8		
XI	16136	XVII	763	XLVI	51		
XII	546	XVIII	740	XLVII	6		
XIII	2968	XIX	248	XLVIII	8		
XIV	5578	XX	326	XLIX	42		
XV	2574	XXI	77	L	2		
XVI	256	XXII	3	LI	2		
XVII	71	XXIII	2				
		XXIV	257	LII	164	LXIII	2.34
		XXV	104	LIII	35	LXIV	0.23
		XXVI	151	LIV	42	LXV	0.03
		XXVII	— 20163	LV	— 801.8	LXVI	— 3".029
		XXVIII	1768	LVI	20.9	LXVII	0.096
		XXIX	40	LVII	0.4		— 2.933 X 2 = — 5.87
		XXX	152				
		XXXI	31				
		XXXII	— 1817.2				
		XXXIII	57				
		XXXIV	55				
		XXXV	— .058 X 8 =				
		XXXVI	— 109° 55' 39".01				
		XXXVII	90 43 30.89				
		XXXVIII	8.94				
		XXXIX	— 200 39 18.84				
		XL	— 109° 58' 45".38				
		XLI	0.9851992				
		XLII	+ 2° 29' 18".18				
		XLIII	— 109° 55' 39".01				
		XLIV	90 43 30.89				
		XLV	8.94				
		XLVI	— 200 39 18.84				
		XLVII	— 109° 58' 45".38				
		XLVIII	0.9851992				
		XLIX	+ 2° 29' 18".18				
		L	— 109° 55' 39".01				
		LI	90 43 30.89				
		LII	8.94				
		LIII	— 200 39 18.84				
		LIV	— 109° 58' 45".38				
		LV	0.9851992				
		LVI	+ 2° 29' 18".18				
		LVII	— 109° 55' 39".01				
		LVIII	90 43 30.89				
		LIX	8.94				
		LX	— 200 39 18.84				
		LXI	— 109° 58' 45".38				
		LXII	0.9851992				
		LXIII	+ 2° 29' 18".18				
		LXIV	— 109° 55' 39".01				
		LXV	90 43 30.89				
		LXVI	8.94				
		LXVII	— 200 39 18.84				
		LXVIII	— 109° 58' 45".38				
		LXIX	0.9851992				
		LXX	+ 2° 29' 18".18				
		LXXI	— 109° 55' 39".01				
		LXXII	90 43 30.89				
		LXXIII	8.94				
		LXXIV	— 200 39 18.84				
		LXXV	— 109° 58' 45".38				
		LXXVI	0.9851992				
		LXXVII	+ 2° 29' 18".18				
		LXXVIII	— 109° 55' 39".01				
		LXXIX	90 43 30.89				
		LXXX	8.94				
		LXXXI	— 200 39 18.84				
		LXXXII	— 109° 58' 45".38				
		LXXXIII	0.9851992				
		LXXXIV	+ 2° 29' 18".18				
		LXXXV	— 109° 55' 39".01				
		LXXXVI	90 43 30.89				
		LXXXVII	8.94				
		LXXXVIII	— 200 39 18.84				
		LXXXIX	— 109° 58' 45".38				
		LXXXX	0.9851992				
		LXXXXI	+ 2° 29' 18".18				
		LXXXXII	— 109° 55' 39".01				
		LXXXXIII	90 43 30.89				
		LXXXXIV	8.94				
		LXXXXV	— 200 39 18.84				
		LXXXXVI	— 109° 58' 45".38				
		LXXXXVII	0.9851992				
		LXXXXVIII	+ 2° 29' 18".18				
		LXXXXIX	— 109° 55' 39".01				
		LXXXXX	90 43 30.89				
		LXXXXXI	8.94				
		LXXXXXII	— 200 39 18.84				
		LXXXXXIII	— 109° 58' 45".38				
		LXXXXXIV	0.9851992				
		LXXXXXV	+ 2° 29' 18".18				
		LXXXXXVI	— 109° 55' 39".01				
		LXXXXXVII	90 43 30.89				
		LXXXXXVIII	8.94				
		LXXXXXIX	— 200 39 18.84				
		LXXXXXX	— 109° 58' 45".38				
		LXXXXXXI	0.9851992				
		LXXXXXXII	+ 2° 29' 18".18				
		LXXXXXXIII	— 109° 55' 39".01				
		LXXXXXXIV	90 43 30.89				
		LXXXXXXV	8.94				
		LXXXXXXVI	— 200 39 18.84				
		LXXXXXXVII	— 109° 58' 45".38				
		LXXXXXXVIII	0.9851992				
		LXXXXXXIX	+ 2° 29' 18".18				
		LXXXXXXX	— 109° 55' 39".01				
		LXXXXXXXI	90 43 30.89				
		LXXXXXXXII	8.94				
		LXXXXXXXIII	— 200 39 18.84				
		LXXXXXXXIV	— 109° 58' 45".38				
		LXXXXXXXV	0.9851992				
		LXXXXXXXVI	+ 2° 29' 18".18				
		LXXXXXXXVII	— 109° 55' 39".01				
		LXXXXXXXVIII	90 43 30.89				
		LXXXXXXXIX	8.94				
		LXXXXXXXX	— 200 39 18.84				
		LXXXXXXXXI	— 109° 58' 45".38				
		LXXXXXXXII	0.9851992				
		LXXXXXXXIII	+ 2° 29' 18".18				
		LXXXXXXXIV	— 109° 55' 39".01				
		LXXXXXXXV	90 43 30.89				
		LXXXXXXXVI	8.94				
		LXXXXXXXVII	— 200 39 18.84				
		LXXXXXXXVIII	— 109° 58' 45".38				
		LXXXXXXXIX	0.9851992				
		LXXXXXXXX	+ 2° 29' 18".18				
		LXXXXXXXXI	— 109° 55' 39".01				
		LXXXXXXXII	90 43 30.89				
		LXXXXXXXIII	8.94				
		LXXXXXXXIV	— 200 39 18.84				
		LXXXXXXXV	— 109° 58' 45".38				
		LXXXXXXXVI	0.9851992				
		LXXXXXXXVII	+ 2° 29' 18".18				
		LXXXXXXXVIII	— 109° 55' 39".01				
		LXXXXXXXIX	90 43 30.89				
		LXXXXXXXX	8.94				
		LXXXXXXXXI	— 200 39 18.84				
		LXXXXXXXII	— 109° 58' 45".38				
		LXXXXXXXIII	0.9851992				
		LXXXXXXXIV	+ 2° 29' 18".18				
		LXXXXXXXV	— 109° 55' 39".01				
		LXXXXXXXVI	90 43 30.89				
		LXXXXXXXVII	8.94				
		LXXXXXXXVIII	— 200 39 18.84				
		LXXXXXXXIX	— 109° 58' 45".38				
		LXXXXXXXX	0.9851992				
		LXXXXXXXXI	+ 2° 29' 18".18				
		LXXXXXXXII	— 109° 55' 39".01				
		LXXXXXXXIII	90 43 30.89				
		LXXXXXXXIV	8.94				
		LXXXXXXXV	— 200 39 18.84				
		LXXXXXXXVI	— 109° 58' 45".38				
		LXXXXXXXVII	0.9851992				
		LXXXXXXXVIII	+ 2° 29' 18".18				
		LXXXXXXXIX	— 109° 55' 39".01				
		LXXXXXXXX	90 43 30.89				
		LXXXXXXXXI	8.94				
		LXXXXXXXII	— 200 39 18.84				
		LXXXXXXXIII	— 109° 58' 45".38				
		LXXXXXXXIV	0.9851992				
		LXXXXXXXV	+ 2° 29' 18".18				
		LXXXXXXXVI	— 109° 55' 39".01				
		LXXXXXXXVII	90 43 30.89				
		LXXXXXXXVIII	8.94				
		LXXXXXXXIX	— 200 39 18.84				
		LXXXXXXXX	— 109° 58' 45".38				
		LXXXXXXXXI	0.9851992				
		LXXXXXXXII	+ 2° 29' 18".18				
		LXXXXXXXIII	— 109° 55' 39".01				
		LXXXXXXXIV	90 43 30.89				
		LXXXXXXXV	8.94				
		LXXXXXXXVI	— 200 39 18.84				
		LXXXXXXXVII	— 109° 58' 45".38				
		LXXXXXXXVIII	0.9851992				
		LXXXXXXXIX	+ 2° 29' 18".18				
		LXXXXXXXX	— 109° 55' 39".01				
		LXXXXXXXXI	90 43 30.89				
		LXXXXXXXII	8.94				
		LXXXXXXXIII	— 200 39 18.84				
		LXXXXXXXIV	— 109° 58' 45".38				
		LXXXXXXXV	0.9851992				
		LXXXXXXXVI	+ 2° 29' 18".18				
		LXXXXXXXVII	— 109° 55' 39".01				
		LXXXXXXXVIII	90 43 30.89				
		LXXXXXXXIX	8.94				
		LXXXXXXXX	— 200 39 18.84				
		LXXXXXXXXI	— 109° 58' 45".38				
		LXXXXXXXII	0.9851992				
		LXXXXXXXIII	+ 2° 29' 18".18				
		LXXXXXXXIV	— 109° 55' 39".01				
		LXXXXXXXV	90 43 30.89				
		LXXXXXXXVI	8.94				
		LXXXXXXXVII	— 200 39 18.84				
		LXXXXXXXVIII	— 109° 58' 45".38				
		LXXXXXXXIX	0.9851992				
		LXXXXXXXX	+ 2° 29' 18".18				
		LXXXXXXXXI	— 109° 55' 39".01				
		LXXXXXXXII	90 43 30.89				
		LXXXXXXXIII	8.94				
		LXXXXXXXIV	— 200 39 18.84				
		LXXXXXXXV	— 109° 58' 45".38				
		LXXXXXXXVI	0.9851992				
		LXXXXXXXVII	+ 2° 29' 18".18				
		LXXXXXXXVIII	— 109° 55' 39".01				
		LXXXXXXXIX	90 43 30.89				
		LXXXXXXXX	8.94				
		LXXXXXXXXI	— 200 39 18.84				
		LXXXXXXXII	— 109° 58' 45".38				
		LXXXXXXXIII	0.9851992				
		LXXXXXXXIV	+ 2° 29' 18".18				
		LXXXXXXXV	— 109° 55' 39".01				
		LXXXXXXXVI	90 43 30.89				
		LXXXXXXXVII	8.94				
		LXXXXXXXVIII	— 200 39 18.84				
		LXXXXXXXIX	— 109° 58' 45".38				

Second Example.—Calculation of the position of Saturn for 1007, October 31.153, Greenwich mean time.

Desig. of Arg.	Value of Arg.	Table.	Fund. Arg.	Table.	Log Radius.	Table.	Latitude.
I	2144 ^d .74	VII	41	XXXXVI	8		
II		VIII	11.29	XXXXVII	3		
III	3703	IX	45	XXXXVIII	74	LXI	0"
IV	4309	X	37	XXXXIX	79		
V	5468	XI	21	XL	5		
VI	3997	XII	45	XLII	5		
VII	10141	XIII	2	XLIII	2		
VIII	7208	XIV	7	XLIV	1	LXII	1
IX	85	XV	2	XLV	1		
X	2749	XVI	1				
XI	16081	XVII	8	XLVI	2		
XII	1096	XVIII	7	XLVII	0		
XIII	4048	XIX	6	XLVIII	0		
XIV	9149	XX	2	XLIX	0		
XV	1627	XXI	4				
$m = -28 \begin{cases} A = \\ B = \\ C = \end{cases}$							
<i>Details of Interp. in Tables XXXV, LX, LXX.</i>							
Log (-3.18)	0.5024 ⁿ	XXVII	-511	LVI	-572.4	LXVI	+9".792
Log Mot. in XXXV	2.0923	XXVIII	13	LVI	11.1	LXVII	0 .089
Log Mot. in LX	2.1517	XXIX	0	LVI	0.7		+9 .881 X -28 = -277
Log Mot. in LXX	0.4711	XXX	1		-560.6 X -28 = +157		
		XXXI	1				
<i>Prop. parts.</i>							
XXXV	-6' 33"	XXXII	+443	LVIII	+1.25	LXVIII	-0".0352 X (-28) ² = -28
LX	-4.51	XXXIII	34	LIX	.14	LXIX	-0".00002 X (-28) ³ = 0
LXX	-9"	XXXIV	+477 X (-28) ² = +0.37		+1.39 X (-28) ² = +11		
		Arg. I	-57 X (-28) ³ = +0.13				
<i>Quan. from tables with Arg. = 2176^d.</i>							
XXXV	79° 2' 16"	Fund. Arg. =	2172.82				
LX	0.9722037						
LXX	+ 2° 4' 54"	XXXV	78° 55' 43"	LX	0.97216	LXX	+2° 4' 45"
		$\pi + ht$	78 21 15	Log Radius =	0.97567	Hel. Lat.	= +1 59 45
		Hel. Long. =	157 16 58				

TABLES OF SATURN.

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TABLE I.—*Values of the Arguments for the Greenwich mean noon of Jan. 0*

Year.	m.	I.	II.	III.	IV.	V.	VI.	VII.	VIII.
		d.	d.	d.	d.	d.	d.	d.	d.
1750	—3	4230. 5591	73236	7946. 44	6996. 8	5217	1741. 1	8866	13181
1751	—3	4595. 5591	73601	8311. 44	108. 3	5582	2106. 1	9231	13546
1752 B	—3	4961. 5591	73967	8677. 44	474. 3	5948	2472. 1	9597	13912
1753	—3	5326. 5591	74332	9042. 44	839. 3	6313	2837. 1	9962	14277
1754	—3	5691. 5591	74697	9407. 44	1204. 3	6678	3202. 1	10327	14642
1755	—3	6056. 5591	75062	9772. 44	1569. 3	7043	3567. 1	10692	15007
1756 B	—3	6422. 5591	75428	10138. 44	1935. 3	7409	3933. 1	11058	15373
1757	—3	6787. 5591	75793	10503. 44	2300. 3	7774	4298. 1	76	15738
1758	—3	7152. 5591	76158	10868. 44	2665. 3	8139	4663. 1	441	16103
1759	—3	7517. 5591	76523	11233. 44	3030. 3	8504	5028. 1	806	16468
1760 B	—3	7883. 5591	76889	11599. 44	3396. 3	8870	5394. 1	1172	266
1761	—3	8248. 5591	77254	11964. 44	3761. 3	9235	292. 6	1537	631
1762	—3	8613. 5591	77619	12329. 44	4126. 3	9600	657. 6	1902	996
1763	—3	8978. 5591	77984	12694. 44	4491. 3	9965	1022. 6	2267	1361
1764 B	—3	9344. 5591	78350	13060. 44	4857. 3	10331	1388. 6	2633	1727
1765	—3	9709. 5591	78715	13425. 44	5222. 3	10696	1753. 6	2998	2092
1766	—3	10074. 5591	79080	13790. 44	5587. 3	11061	2118. 6	3363	2457
1767	—3	10439. 5591	79445	14155. 44	5952. 3	11426	2483. 6	3728	2822
1768 B	—2	46. 3582	79811	14521. 44	6318. 3	11792	2849. 6	4094	3188
1769	—2	411. 3582	80176	14886. 44	6683. 3	12157	3214. 6	4459	3553
1770	—2	776. 3582	80541	15251. 44	7048. 3	12522	3579. 6	4824	3918
1771	—2	1141. 3582	80906	15616. 44	159. 8	12887	3944. 6	5189	4283
1772 B	—2	1507. 3582	81272	15982. 44	525. 8	13253	4310. 6	5555	4649
1773	—2	1872. 3582	81637	16347. 44	890. 8	13618	4675. 6	5920	5014
1774	—2	2237. 3582	82002	16712. 44	1255. 8	13983	5040. 6	6285	5379
1775	—2	2602. 3582	82367	17077. 44	1620. 8	14348	5405. 6	6650	5744
1776 B	—2	2968. 3582	82733	17443. 44	1986. 8	14714	305. 2	7016	6110
1777	—2	3333. 3582	83098	17808. 44	2351. 8	15079	670. 2	7381	6475
1778	—2	3698. 3582	83463	18173. 44	2716. 8	15444	1035. 2	7746	6840
1779	—2	4063. 3582	83828	18538. 44	3081. 8	15809	1400. 2	8111	7205
1780 B	—2	4429. 3582	84194	18904. 44	3447. 8	16175	1766. 2	8477	7571
1781	—2	4794. 3582	84559	19269. 44	3812. 8	16540	2131. 2	8842	7936
1782	—2	5159. 3582	84924	19634. 44	4177. 8	16905	2496. 2	9207	8301
1783	—2	5524. 3582	85289	19999. 44	4542. 8	17270	2861. 2	9572	8666
1784 B	—2	5890. 3582	85655	20365. 44	4908. 8	17636	3227. 2	9938	9032
1785	—2	6255. 3582	86020	20730. 44	5273. 8	18001	3592. 2	10303	9397
1786	—2	6620. 3582	86385	21095. 44	5638. 8	18366	3957. 2	10668	9762
1787	—2	6985. 3582	86750	21460. 44	6003. 8	18731	4322. 2	11033	10127
1788 B	—2	7351. 3582	87116	21826. 44	6369. 8	19097	4688. 2	51	10493
1789	—2	7716. 3582	87481	22191. 44	6734. 8	19462	5053. 2	416	10858
1790	—2	8081. 3582	87846	321. 22	7099. 8	19827	5418. 2	781	11223
1791	—2	8446. 3582	88211	686. 22	211. 4	20192	316. 7	1146	11588
1792 B	—2	8812. 3582	88577	1052. 22	577. 4	20558	682. 7	1512	11954
1793	—2	9177. 3582	88942	1417. 22	942. 4	53	1047. 7	1877	12319
1794	—2	9542. 3582	89307	1782. 22	1307. 4	418	1412. 7	2242	12684
1795	—2	9907. 3582	89672	2147. 22	1672. 4	783	1777. 7	2607	13049
1796 B	—2	10273. 3582	90038	2513. 22	2038. 4	1149	2143. 7	2973	13415
1797	—2	10638. 3582	90403	2878. 22	2403. 4	1514	2508. 7	3338	13780
1798	—1	244. 1572	90768	3243. 22	2768. 4	1879	2873. 7	3703	14145
1799	—1	609. 1572	91133	3608. 22	3133. 4	2244	3238. 7	4068	14510

(Jan. 1 in bissextile years) of each year during the period 1750-1950.

IX.	X.	XI.	XII.	XIII.	XIV.	XV.	XVI.	XVII.	$\pi + \text{ht.}$	Year.
d.	d.	d.	d.	d.	d.	d.	d.	d.	° / "	
2476.9	9452	35403	893	2979	5708	1450	151	195	88 42 53.85	1750
2841.9	9817	35768	1258	3344	6073	1815	138	101	88 43 44.08	1751
3207.9	10183	170	1624	3710	6439	2181	126	8	88 44 34.44	1752 B
3572.9	10548	535	1989	4075	6804	2546	113	144	88 45 24.66	1753
3937.9	10913	900	2354	51	7169	198	100	50	88 46 14.89	1754
4302.9	11278	1265	2719	416	7534	563	87	185	88 47 5.11	1755
335.5	150	1631	3085	782	7900	929	74	92	88 47 55.47	1756 B
700.5	515	1996	331	1147	8265	1294	61	228	88 48 45.69	1757
1065.5	880	2361	696	1512	8630	1659	48	134	88 49 35.92	1758
1430.5	1245	2726	1061	1877	8995	2024	35	40	88 50 26.14	1759
1796.5	1611	3092	1427	2243	9361	2390	23	176	88 51 16.50	1760 B
2161.5	1976	3457	1792	2608	9726	43	10	82	88 52 6.73	1761
2526.5	2341	3822	2157	2973	10091	408	375	218	88 52 56.95	1762
2891.5	2706	4187	2522	3338	10456	773	362	124	88 53 47.17	1763
3257.5	3072	4553	2888	3704	264	1139	350	31	88 54 37.54	1764 B
3622.5	3437	4918	135	4069	629	1504	337	166	88 55 27.76	1765
3987.5	3802	5283	500	45	994	1869	324	72	88 56 17.98	1766
19.1	4167	5648	865	410	1359	2234	310	208	88 57 8.21	1767
385.1	4533	6014	1231	776	1725	2600	298	115	88 57 58.57	1768 B
750.1	4898	6379	1596	1141	2090	253	285	21	88 58 48.79	1769
1115.1	5263	6744	1961	1506	2455	618	272	156	88 59 39.02	1770
1480.1	5628	7109	2326	1871	2820	983	259	62	89 0 29.24	1771
1846.1	5994	7475	2692	2237	3186	1349	247	199	89 1 19.60	1772 B
2211.1	6359	7840	3057	2602	3551	1714	234	105	89 2 9.83	1773
2576.1	6724	8205	304	2967	3916	2079	221	11	89 3 0.05	1774
2941.1	7089	8570	669	3332	4281	2444	208	146	89 3 50.27	1775
3307.1	7455	8936	1035	3698	4647	97	196	53	89 4 40.63	1776 B
3672.1	7820	9301	1400	4063	5012	462	183	189	89 5 30.86	1777
4037.1	8185	9666	1765	39	5377	827	169	95	89 6 21.08	1778
68.6	8550	10031	2130	404	5742	1192	156	1	89 7 11.31	1779
434.6	8916	10397	2496	770	6108	1558	144	137	89 8 1.67	1780 B
799.6	9281	10762	2861	1135	6473	1923	131	43	89 8 51.89	1781
1164.6	9646	11127	108	1500	6838	2288	118	179	89 9 42.11	1782
1529.6	10011	11492	473	1865	7203	2653	105	85	89 10 32.34	1783
1895.6	10377	11858	839	2231	7569	307	93	221	89 11 22.70	1784 B
2260.6	10742	12223	1204	2596	7934	672	80	127	89 12 12.92	1785
2625.6	11107	12588	1569	2961	8299	1037	67	33	89 13 3.15	1786
2990.6	11472	12953	1934	3326	8664	1402	54	169	89 13 53.37	1787
3356.6	344	13319	2300	3692	9030	1768	42	76	89 14 43.73	1788 B
3721.6	709	13684	2665	4057	9395	2133	28	211	89 15 33.96	1789
4086.6	1074	14049	3030	32	9760	2498	15	117	89 16 24.18	1790
118.2	1439	14414	277	397	10125	150	2	23	89 17 14.40	1791
484.2	1805	14780	643	763	10491	516	368	160	89 18 4.76	1792 B
849.2	2170	15145	1008	1128	298	881	355	66	89 18 54.99	1793
1214.2	2535	15510	1373	1493	663	1246	342	201	89 19 45.21	1794
1579.2	2900	15875	1738	1858	1028	1611	329	107	89 20 35.44	1795
1945.2	3266	16241	2104	2224	1394	1977	317	14	89 21 25.80	1796 B
2310.2	3631	16606	2469	2589	1759	2342	304	150	89 22 16.02	1797
2675.2	3996	16971	2834	2954	2124	2707	291	56	89 23 6.24	1798
3040.2	4361	17336	81	3319	2489	360	278	191	89 23 56.47	1799

TABLE I.—*Values of the Arguments for the Greenwich mean noon of Jan. 0*

Year.	m.	I.	II.	III.	IV.	V.	VI.	VII.	VIII.
		d.	d.	d.	d.	d.	d.	d.	d.
1800	—I	974. 1572	91498	3973. 22	3498. 4	2609	3603. 7	4433	14875
1801	—I	1339. 1572	91863	4338. 22	3863. 4	2974	3968. 7	4798	15240
1802	—I	1704. 1572	92228	4703. 22	4228. 4	3339	4333. 7	5163	15605
1803	—I	2069. 1572	92593	5068. 22	4593. 4	3704	4698. 7	5528	15970
1804 B	—I	2435. 1572	92959	5434. 22	4959. 4	4070	5064. 7	5894	16336
1805	—I	2800. 1572	93324	5799. 22	5324. 4	4435	5429. 7	6259	132
1806	—I	3165. 1572	93689	6164. 22	5689. 4	4800	328. 3	6624	497
1807	—I	3530. 1572	94054	6529. 22	6054. 4	5165	693. 3	6989	862
1808 B	—I	3896. 1572	94420	6895. 22	6420. 4	5531	1059. 3	7355	1228
1809	—I	4261. 1572	94785	7260. 22	6785. 4	5896	1424. 3	7720	1593
1810	—I	4626. 1572	95150	7625. 22	7150. 4	6261	1789. 3	8085	1958
1811	—I	4991. 1572	95515	7990. 22	261. 9	6626	2154. 3	8450	2323
1812 B	—I	5357. 1572	95881	8356. 22	627. 9	6992	2520. 3	8816	2689
1813	—I	5722. 1572	96246	8721. 22	992. 9	7357	2885. 3	9181	3054
1814	—I	6087. 1572	96611	9086. 22	1357. 9	7722	3250. 3	9546	3419
1815	—I	6452. 1572	96976	9451. 22	1722. 9	8087	3615. 3	9911	3784
1816 B	—I	6818. 1572	97342	9817. 22	2088. 9	8453	3981. 3	10277	4150
1817	—I	7183. 1572	97707	10182. 22	2453. 9	8818	4346. 3	10642	4515
1818	—I	7548. 1572	98072	10547. 22	2818. 9	9183	4711. 3	11007	4880
1819	—I	7913. 1572	98437	10912. 22	3183. 9	9548	5076. 3	25	5245
1820 B	—I	8279. 1572	98803	11278. 22	3549. 9	9914	5442. 3	391	5611
1821	—I	8644. 1572	99168	11643. 22	3914. 9	10279	340. 9	756	5976
1822	—I	9009. 1572	99533	12008. 22	4279. 9	10644	705. 9	1121	6341
1823	—I	9374. 1572	99898	12373. 22	4644. 9	11009	1070. 9	1486	6706
1824 B	—I	9740. 1572	100264	12739. 22	5010. 9	11375	1436. 9	1852	7072
1825	—I	10105. 1572	100629	13104. 22	5375. 9	11740	1801. 9	2217	7437
1826	—I	10470. 1572	100994	13469. 22	5740. 9	12105	2166. 9	2582	7802
1827	o	75. 9563	101359	13834. 22	6105. 9	12470	2531. 9	2947	8167
1828 B	o	441. 9563	101725	14200. 22	6471. 9	12836	2897. 9	3313	8533
1829	o	806. 9563	102090	14565. 22	6836. 9	13201	3262. 9	3678	8898
1830	o	1171. 9563	102455	14930. 22	7201. 9	13566	3627. 9	4043	9263
1831	o	1536. 9563	102820	15295. 22	313. 5	13931	3992. 9	4408	9628
1832 B	o	1902. 9563	103186	15661. 22	679. 5	14297	4358. 9	4774	9994
1833	o	2267. 9563	103551	16026. 22	1044. 5	14662	4723. 9	5139	10359
1834	o	2632. 9563	103916	16391. 22	1409. 5	15027	5088. 9	5504	10724
1835	o	2997. 9563	104281	16756. 22	1774. 5	15392	5453. 9	5869	11089
1836 B	o	3363. 9563	104647	17122. 22	2140. 5	15758	353. 4	6235	11455
1837	o	3728. 9563	105012	17487. 22	2505. 5	16123	718. 4	6600	11820
1838	o	4093. 9563	105377	17852. 22	2870. 5	16488	1083. 4	6965	12185
1839	o	4458. 9563	105742	18217. 22	3235. 5	16853	1448. 4	7330	12550
1840 B	o	4824. 9563	106108	18583. 22	3601. 5	17219	1814. 4	7696	12916
1841	o	5189. 9563	106473	18948. 22	3966. 5	17584	2179. 4	8061	13281
1842	o	5554. 9563	106838	19313. 22	4331. 5	17949	2544. 4	8426	13646
1843	o	5919. 9563	107203	19678. 22	4696. 5	18314	2909. 4	8791	14011
1844 B	o	6285. 9563	107569	20044. 22	5062. 5	18680	3275. 4	9157	14377
1845	o	6650. 9563	107934	20409. 22	5427. 5	19045	3640. 4	9522	14742
1846	o	7015. 9563	108299	20774. 22	5792. 5	19410	4005. 4	9887	15107
1847	o	7380. 9563	108664	21139. 22	6157. 5	19775	4370. 4	10252	15472
1848 B	o	7746. 9563	109030	21505. 22	6523. 5	20141	4736. 4	10618	15838
1849	o	8111. 9563	109395	21870. 22	6888. 5	20506	5101. 4	10983	16203

(Jan. 1 in bissextile years) of each year during the period 1750-1950—Continued.

IX.	X.	XI.	XII.	XIII.	XIV.	XV.	XVI.	XVII.	$\pi + h.$	Year.
d.	d.	d.	d.	d.	d.	d.	d.	d.	° ' "	
3405.2	4726	17701	446	3684	2854	725	265	97	89 24 46.69	1800
3770.2	5091	18066	811	4049	3219	1090	251	4	89 25 36.92	1801
4135.2	5456	18431	1176	25	3584	1455	238	139	89 26 27.14	1802
166.7	5821	18796	1541	390	3949	1820	225	45	89 27 17.36	1803
532.7	6187	19162	1907	756	4315	2186	213	182	89 28 7.72	1804 B
897.7	6552	19527	2272	1121	4680	2551	200	88	89 28 57.95	1805
1262.7	6917	19892	2637	1486	5045	204	187	223	89 29 48.17	1806
1627.7	7282	20257	3002	1851	5410	569	174	129	89 30 38.40	1807
1993.7	7648	20623	250	2217	5776	935	162	36	89 31 28.76	1808 B
2358.7	8013	20988	615	2582	6141	1300	149	172	89 32 18.98	1809
2723.7	8378	21353	980	2947	6506	1665	136	78	89 33 9.20	1810
3088.7	8743	21718	1345	3312	6871	2030	122	213	89 33 59.43	1811
3454.7	9109	22084	1711	3678	7237	2396	110	120	89 34 49.79	1812 B
3819.7	9474	22449	2076	4043	7602	48	97	26	89 35 40.01	1813
4184.7	9839	22814	2441	19	7967	413	84	162	89 36 30.24	1814
216.3	10204	23179	2806	384	8332	778	71	68	89 37 20.46	1815
582.3	10570	23545	54	750	8698	1144	59	204	89 38 10.82	1816 B
947.3	10935	23910	419	1115	9063	1509	46	110	89 39 1.05	1817
1312.3	11300	24275	784	1480	9428	1874	33	16	89 39 51.27	1818
1677.3	171	24640	1149	1845	9793	2239	20	152	89 40 41.49	1819
2043.3	537	25006	1515	2211	10159	2605	8	59	89 41 31.85	1820 B
2408.3	902	25371	1880	2576	10524	258	373	194	89 42 22.08	1821
2773.3	1267	25736	2245	2941	331	623	360	100	89 43 12.30	1822
3138.3	1632	26101	2610	3306	696	988	346	6	89 44 2.53	1823
3504.3	1998	26467	2976	3672	1062	1354	334	143	89 44 52.89	1824 B
3869.3	2363	26832	223	4037	1427	1719	321	49	89 45 43.11	1825
4234.3	2728	27197	588	13	1792	2084	308	184	89 46 33.33	1826
265.9	3093	27562	953	378	2157	2449	295	90	89 47 23.56	1827
631.9	3459	27928	1319	744	2523	102	283	227	89 48 13.92	1828 B
996.9	3824	28293	1684	1109	2888	467	270	133	89 49 4.14	1829
1361.9	4189	28658	2049	1474	3253	832	257	39	89 49 54.37	1830
1726.9	4554	29023	2414	1839	3618	1197	244	174	89 50 44.59	1831
2092.9	4920	29389	2780	2205	3984	1563	232	81	89 51 34.95	1832 B
2457.9	5285	29754	27	2570	4349	1928	219	217	89 52 25.18	1833
2822.9	5650	30119	392	2935	4714	2293	205	123	89 53 15.40	1834
3187.9	6015	30484	757	3300	5079	2658	192	29	89 54 5.62	1835
3553.9	6381	30850	1123	3666	5445	312	180	165	89 54 55.98	1836 B
3918.9	6746	31215	1488	4031	5810	677	167	71	89 55 46.21	1837
4283.9	7111	31580	1853	6	6175	1042	154	207	89 56 36.43	1838
315.4	7476	31945	2218	371	6540	1407	141	113	89 57 26.66	1839
681.4	7842	32311	2584	737	6906	1773	129	20	89 58 17.02	1840 B
1046.4	8207	32676	2949	1102	7271	2138	116	155	89 59 7.24	1841
1411.4	8572	33041	196	1467	7636	2503	103	61	89 59 57.46	1842
1776.4	8937	33406	561	1832	8001	155	90	197	90 0 47.69	1843
2142.4	9303	33772	927	2198	8367	521	78	104	90 1 38.05	1844 B
2507.4	9668	34137	1292	2563	8732	886	64	10	90 2 28.27	1845
2872.4	10033	34502	1657	2928	9097	1251	51	145	90 3 18.50	1846
3237.4	10398	34867	2022	3293	9462	1616	38	51	90 4 8.72	1847
3603.4	10764	35233	2388	3659	9828	1982	26	188	90 4 59.08	1848 B
3968.4	11129	35598	2753	4024	10193	2347	13	94	90 5 49.31	1849

TABLE I.—*Values of the Arguments for the Greenwich mean noon of Jan. 0*

Year.	m.	I.	II.	III.	IV.	V.	VI.	VII.	VIII.
		d.	d.	d.	d.	d.	d.	d.	d.
1850	0	8476.9563	109760	0.00	0.0	0	0.0	0	0
1851	0	8841.9563	110125	365.00	365.0	365	365.0	365	365
1852 B	0	9207.9563	110491	731.00	731.0	731	731.0	731	731
1853	0	9572.9563	110856	1096.00	1096.0	1096	1096.0	1096	1096
1854	0	9937.9563	111221	1461.00	1461.0	1461	1461.0	1461	1461
1855	0	10302.9563	111586	1826.00	1826.0	1826	1826.0	1826	1826
1856 B	0	10668.9563	111952	2192.00	2192.0	2192	2192.0	2192	2192
1857	1	274.7554	112317	2557.00	2557.0	2557	2557.0	2557	2557
1858	1	639.7554	112682	2922.00	2922.0	2922	2922.0	2922	2922
1859	1	1004.7554	113047	3287.00	3287.0	3287	3287.0	3287	3287
1860 B	1	1370.7554	113413	3653.00	3653.0	3653	3653.0	3653	3653
1861	1	1735.7554	113778	4018.00	4018.0	4018	4018.0	4018	4018
1862	1	2100.7554	114143	4383.00	4383.0	4383	4383.0	4383	4383
1863	1	2465.7554	114508	4748.00	4748.0	4748	4748.0	4748	4748
1864 B	1	2831.7554	114874	5114.00	5114.0	5114	5114.0	5114	5114
1865	1	3196.7554	115239	5479.00	5479.0	5479	12.6	5479	5479
1866	1	3561.7554	115604	5844.00	5844.0	5844	377.6	5844	5844
1867	1	3926.7554	115969	6209.00	6209.0	6209	742.6	6209	6209
1868 B	1	4292.7554	116335	6575.00	6575.0	6575	1108.6	6575	6575
1869	1	4657.7554	116700	6940.00	6940.0	6940	1473.6	6940	6940
1870	1	5022.7554	117065	7305.00	51.5	7305	1838.6	7305	7305
1871	1	5387.7554	117430	7670.00	416.5	7670	2203.6	7670	7670
1872 B	1	5753.7554	117796	8036.00	782.5	8036	2569.6	8036	8036
1873	1	6118.7554	118161	8401.00	1147.5	8401	2934.6	8401	8401
1874	1	6483.7554	118526	8766.00	1512.5	8766	3299.6	8766	8766
1875	1	6848.7554	118891	9131.00	1877.5	9131	3664.6	9131	9131
1876 B	1	7214.7554	119257	9497.00	2243.5	9497	4030.6	9497	9497
1877	1	7579.7554	119622	9862.00	2608.5	9862	4395.6	9862	9862
1878	1	7944.7554	119987	10227.00	2973.5	10227	4760.6	10227	10227
1879	1	8309.7554	120352	10592.00	3338.5	10592	5125.6	10592	10592
1880 B	1	8675.7554	120718	10958.00	3704.5	10958	25.1	10958	10958
1881	1	9040.7554	121083	11323.00	4069.5	11323	390.1	11323	11323
1882	1	9405.7554	121448	11688.00	4434.5	11688	755.1	340	11688
1883	1	9770.7554	121813	12053.00	4799.5	12053	1120.1	705	12053
1884 B	1	10136.7554	122179	12419.00	5165.5	12419	1486.1	1071	12419
1885	1	10501.7554	122544	12784.00	5530.5	12784	1851.1	1436	12784
1886	2	107.5545	122909	13149.00	5895.5	13149	2216.1	1801	13149
1887	2	472.5545	123274	13514.00	6260.5	13514	2581.1	2166	13514
1888 B	2	838.5545	123640	13880.00	6626.5	13880	2947.1	2532	13880
1889	2	1203.5545	124005	14245.00	6991.5	14245	3312.1	2897	14245
1890	2	1568.5545	124370	14610.00	103.1	14610	3677.1	3262	14610
1891	2	1933.5545	124735	14975.00	468.1	14975	4042.1	3627	14975
1892 B	2	2299.5545	125101	15341.00	834.1	15341	4408.1	3993	15341
1893	2	2664.5545	125466	15706.00	1199.1	15706	4773.1	4358	15706
1894	2	3029.5545	125831	16071.00	1564.1	16071	5138.1	4723	16071
1895	2	3394.5545	126196	16436.00	1929.1	16436	36.7	5088	16436
1896 B	2	3760.5545	126562	16802.00	2295.1	16802	402.7	5454	234
1897	2	4125.5545	126927	17167.00	2660.1	17167	767.7	5819	599
1898	2	4490.5545	127292	17532.00	3025.1	17532	1132.7	6184	964
1899	2	4855.5545	127657	17897.00	3390.1	17897	1497.7	6549	1329

(Jan. 1 in bissextile years) of each year during the period 1750-1950—Continued.

IX.	X.	XI.	XII.	XIII.	XIV.	XV.	XVI.	XVII.	$\pi + hr.$	Year.
d.	d.	d.	d.	d.	d.	d.	d.	d.	° ' "	
0.0	0	0	0	0	0	0	0	0	90 6 39.53	1850
365.0	365	365	365	365	365	365	365	136	90 7 29.75	1851
731.0	731	731	731	731	731	731	353	43	90 8 20.12	1852 B
1096.0	1096	1096	1096	1096	1096	1096	340	178	90 9 10.34	1853
1461.0	1461	1461	1461	1461	1461	1461	327	84	90 10 0.56	1854
1826.0	1826	1826	1826	1826	1826	1826	314	220	90 10 50.79	1855
2192.0	2192	2192	2192	2192	2192	2192	302	127	90 11 41.15	1856 B
2557.0	2557	2557	2557	2557	2557	2557	288	33	90 12 31.37	1857
2922.0	2922	2922	2922	2922	2922	210	275	168	90 13 21.60	1858
3287.0	3287	3287	169	3287	3287	575	262	74	90 14 11.82	1859
3653.0	3653	3653	535	3653	3653	941	250	211	90 15 2.18	1860 B
4018.0	4018	4018	900	4018	4018	1306	237	117	90 15 52.40	1861
49.6	4383	4383	1265	4383	4383	1671	224	23	90 16 42.63	1862
414.6	4748	4748	1630	359	4748	2036	211	158	90 17 32.85	1863
780.6	5114	5114	1996	725	5114	2402	199	65	90 18 23.21	1864 B
1145.6	5479	5479	2361	1090	5479	54	186	201	90 19 13.44	1865
1510.6	5844	5844	2726	1455	5844	419	173	107	90 20 3.66	1866
1875.6	6209	6209	3091	1820	6209	784	160	13	90 20 53.88	1867
2241.6	6575	6575	339	2186	6575	1150	147	149	90 21 44.25	1868 B
2606.6	6940	6940	704	2551	6940	1515	134	55	90 22 34.47	1869
2971.6	7305	7305	1069	2916	7305	1880	121	191	90 23 24.69	1870
3336.6	7670	7670	1434	3281	7670	2245	108	97	90 24 14.92	1871
3702.6	8036	8036	1800	3647	8036	2611	96	4	90 25 5.28	1872 B
4067.6	8401	8401	2165	4012	8401	264	83	139	90 25 55.50	1873
99.1	8766	8766	2530	4377	8766	629	70	45	90 26 45.73	1874
464.1	9131	9131	2895	352	9131	994	57	181	90 27 35.95	1875
830.1	9497	9497	143	718	9497	1360	45	88	90 28 26.31	1876 B
1195.1	9862	9862	508	1083	9862	1725	32	223	90 29 16.53	1877
1560.1	10227	10227	873	1448	10227	2090	19	129	90 30 6.76	1878
1925.1	10592	10592	1238	1813	34	2455	5	35	90 30 56.98	1879
2291.1	10958	10958	1604	2179	400	108	371	172	90 31 47.34	1880 B
2656.1	11323	11323	1969	2544	765	473	358	78	90 32 37.57	1881
3021.1	194	11688	2334	2909	1130	838	345	213	90 33 27.79	1882
3386.1	559	12053	2699	3274	1495	1203	332	119	90 34 18.01	1883
3752.1	925	12419	3065	3640	1861	1569	320	26	90 35 8.38	1884 B
4117.1	1290	12784	312	4005	2226	1934	307	162	90 35 58.60	1885
148.7	1655	13149	677	4370	2591	2299	294	68	90 36 48.82	1886
513.7	2020	13514	1042	346	2956	2604	281	203	90 37 39.05	1887
879.7	2386	13880	1408	712	3322	318	269	110	90 38 29.41	1888 B
1244.7	2751	14245	1773	1077	3687	683	256	16	90 39 19.63	1889
1609.7	3116	14610	2138	1442	4052	1048	243	152	90 40 9.86	1890
1974.7	3481	14975	2503	1807	4417	1413	229	58	90 41 0.08	1891
2340.7	3847	15341	2869	2173	4783	1779	217	194	90 41 50.44	1892 B
2705.7	4212	15706	116	2538	5148	2144	204	100	90 42 40.66	1893
3070.7	4577	16071	481	2903	5513	2509	191	6	90 43 30.89	1894
3435.7	4942	16436	846	3268	5878	161	178	142	90 44 21.11	1895
3801.7	5308	16802	1212	3634	6244	527	166	49	90 45 11.47	1896 B
4166.7	5673	17167	1577	3999	6609	892	153	184	90 46 1.70	1897
198.3	6038	17532	1942	4364	6974	1257	140	90	90 46 51.92	1898
563.3	6403	17897	2307	340	7339	1622	127	226	90 47 42.14	1899

TABLE I.—*Values of the Arguments for the Greenwich mean noon of Jan. 0*

Year.	m.	I.	II.	III.	IV.	V.	-VI.	VII.	VIII.
		d.	d.	d.	d.	d.	d.	d.	d.
1900	2	5220.5545	128022	18262.00	3755.1	18262	1862.7	6914	1694
1901	2	5585.5545	128387	18627.00	4120.1	18627	2227.7	7279	2059
1902	2	5950.5545	128752	18992.00	4485.1	18992	2592.7	7644	2424
1903	2	6315.5545	129117	19357.00	4850.1	19357	2957.7	8009	2789
1904 B	2	6681.5545	129483	19723.00	5216.1	19723	3323.7	8375	3155
1905	2	7046.5545	129848	20088.00	5581.1	20088	3688.7	8740	3520
1906	2	7411.5545	130213	20453.00	5946.1	20453	4053.7	9105	3885
1907	2	7776.5545	130578	20818.00	6311.1	20818	4418.7	9470	4250
1908 B	2	8142.5545	130944	21184.00	6677.1	313	4784.7	9836	4616
1909	2	8507.5545	131309	21549.00	7042.1	678	5149.7	10201	4981
1910	2	8872.5545	131674	21914.00	153.6	1043	48.3	10566	5346
1911	2	9237.5545	132039	43.78	518.6	1408	413.3	10931	5711
1912 B	2	9603.5545	132405	409.78	884.6	1774	779.3	11297	6077
1913	2	9968.5545	132770	774.78	1249.6	2139	1144.3	315	6442
1914	2	10333.5545	133135	1139.78	1614.6	2504	1509.3	680	6807
1915	2	10698.5545	133500	1504.78	1979.6	2869	1874.3	1045	7172
1916 B	3	305.3536	133866	1870.78	2345.6	3235	2240.3	1411	7538
1917	3	670.3536	134231	2235.78	2710.6	3600	2605.3	1776	7903
1918	3	1035.3536	134596	2600.78	3075.6	3965	2970.3	2141	8268
1919	3	1400.3536	134961	2965.78	3440.6	4330	3335.3	2506	8633
1920 B	3	1766.3536	135327	3331.78	3806.6	4696	3701.3	2872	8999
1921	3	2131.3536	135692	3696.78	4171.6	5061	4066.3	3237	9364
1922	3	2496.3536	136057	4061.78	4536.6	5426	4431.3	3602	9729
1923	3	2861.3536	136422	4426.78	4901.6	5791	4796.3	3967	10094
1924 B	3	3227.3536	136788	4792.78	5267.6	6157	5162.3	4333	10460
1925	3	3592.3536	137153	5157.78	5632.6	6522	60.8	4698	10825
1926	3	3957.3536	137518	5522.78	5997.6	6887	425.8	5063	11190
1927	3	4322.3536	137883	5887.78	6362.6	7252	790.8	5428	11555
1928 B	3	4688.3536	138249	6253.78	6728.6	7618	1156.8	5794	11921
1929	3	5053.3536	138614	6618.78	7093.6	7983	1521.8	6159	12286
1930	3	5418.3536	138979	6983.78	205.2	8348	1886.8	6524	12651
1931	3	5783.3536	139344	7348.78	570.2	8713	2251.8	6889	13016
1932 B	3	6149.3536	139710	7714.78	936.2	9079	2617.8	7255	13382
1933	3	6514.3536	140075	8079.78	1301.2	9444	2982.8	7620	13747
1934	3	6879.3536	140440	8444.78	1666.2	9809	3347.8	7985	14112
1935	3	7244.3536	140805	8809.78	2031.2	10174	3712.8	8350	14477
1936 B	3	7610.3536	141171	9175.78	2397.2	10540	4078.8	8716	14843
1937	3	7975.3536	141536	9540.78	2762.2	10905	4443.8	9081	15208
1938	3	8340.3536	141901	9905.78	3127.2	11270	4808.8	9446	15573
1939	3	8705.3536	142266	10270.78	3492.2	11635	5173.8	9811	15938
1940 B	3	9071.3536	142632	10636.78	3858.2	12001	73.4	10177	16304
1941	3	9436.3536	142997	11001.78	4223.2	12366	438.4	10542	100
1942	3	9801.3536	143362	11366.78	4588.2	12731	803.4	10907	465
1943	3	10166.3536	143727	11731.78	4953.2	13096	1168.4	11272	830
1944 B	3	10532.3536	144093	12097.78	5319.2	13462	1534.4	290	1196
1945	4	138.1527	144458	12462.78	5684.2	13827	1899.4	655	1561
1946	4	503.1527	144823	12827.78	6049.2	14192	2264.4	1020	1926
1947	4	868.1527	145188	13192.78	6414.2	14557	2629.4	1385	2291
1948 B	4	1234.1527	145554	13558.78	6780.2	14923	2995.4	1751	2657
1949	4	1599.1527	145919	13923.78	7145.2	15288	3360.4	2116	3022

(Jan. 1 in bissextile years) of each year during the period 1750-1950—Continued.

IX.	X.	XI.	XII.	XIII.	XIV.	XV.	XVI.	XVII.	$\pi + \text{ht.}$	Year.
d.	d.	d.	d.	d.	d.	d.	d.	d.	° ' "	
928.3	6768	18262	2672	705	7704	1987	114	132	90 48 32.37	1900
1293.3	7133	18627	3037	1070	8069	2352	100	38	90 49 22.59	1901
1658.3	7498	18992	284	1435	8434	5	87	174	90 50 12.82	1902
2023.3	7863	19357	649	1800	8799	370	74	80	90 51 3.04	1903
2389.3	8229	19723	1015	2166	9165	736	62	216	90 51 53.40	1904 B
2754.3	8594	20088	1380	2531	9530	1101	49	122	90 52 43.62	1905
3119.3	8959	20453	1745	2896	9895	1466	36	28	90 53 33.85	1906
3484.3	9324	20818	2110	3261	10260	1831	23	164	90 54 24.07	1907
3850.3	9690	21184	2476	3627	68	2197	11	71	90 55 14.43	1908 B
4215.3	10055	21549	2841	3992	433	2562	376	206	90 56 4.66	1909
246.8	10420	21914	88	4357	798	215	363	112	90 56 54.88	1910
611.8	10785	22279	453	333	1163	580	350	18	90 57 45.10	1911
977.8	11151	22645	819	699	1529	946	338	155	90 58 35.47	1912 B
1342.8	22	23010	1184	1064	1894	1311	324	61	90 59 25.69	1913
1707.8	387	23375	1549	1429	2259	1676	311	196	91 0 15.91	1914
2072.8	752	23740	1914	1794	2624	2041	298	102	91 1 6.14	1915
2438.8	1118	24106	2280	2160	2990	2407	286	9	91 1 56.50	1916 B
2803.8	1483	24471	2645	2525	3355	59	273	145	91 2 46.72	1917
3168.8	1848	24836	3010	2890	3720	424	260	51	91 3 36.95	1918
3533.8	2213	25201	257	3255	4085	789	247	186	91 4 27.17	1919
3899.8	2579	25567	623	3621	4451	1155	235	93	91 5 17.53	1920 B
4264.8	2944	25932	988	3986	4816	1520	222	229	91 6 7.75	1921
296.4	3309	26297	1353	4351	5181	1885	209	135	91 6 57.98	1922
661.4	3674	26662	1718	326	5546	2250	196	41	91 7 48.20	1923
1027.4	4040	27028	2084	692	5912	2616	183	177	91 8 38.56	1924 B
1392.4	4405	27393	2449	1057	6277	269	170	83	91 9 28.79	1925
1757.4	4770	27758	2814	1422	6642	634	157	219	91 10 19.01	1926
2122.4	5135	28123	61	1787	7007	999	144	125	91 11 9.23	1927
2488.4	5501	28489	427	2153	7373	1365	132	32	91 11 59.60	1928 B
2853.4	5866	28854	792	2518	7738	1730	119	167	91 12 49.82	1929
3218.4	6231	29219	1157	2883	8103	2095	106	73	91 13 40.04	1930
3583.4	6596	29584	1522	3248	8468	2460	93	209	91 14 30.27	1931
3949.4	6962	29950	1888	3614	8834	113	81	116	91 15 20.63	1932 B
4314.4	7327	30315	2253	3979	9199	478	68	22	91 16 10.85	1933
345.9	7692	30680	2618	4344	9564	843	55	157	91 17 1.08	1934
710.9	8057	31045	2983	320	9929	1208	41	63	91 17 51.30	1935
1076.9	8423	31411	231	686	10295	1574	29	200	91 18 41.66	1936 B
1441.9	8788	31776	596	1051	102	1939	16	106	91 19 31.88	1937
1806.9	9153	32141	961	1416	467	2304	3	12	91 20 22.11	1938
2171.9	9518	32506	1326	1781	832	2669	368	147	91 21 12.33	1939
2537.9	9884	32872	1692	2147	1198	323	356	54	91 22 2.69	1940 B
2902.9	10249	33237	2057	2512	1563	688	343	190	91 22 52.92	1941
3267.9	10614	33602	2422	2877	1928	1053	330	96	91 23 43.14	1942
3632.9	10979	33967	2787	3242	2293	1418	317	2	91 24 33.37	1943
3998.9	11345	34333	35	3608	2659	1784	305	138	91 25 23.73	1944 B
30.5	216	34698	400	3973	3024	2149	292	44	91 26 13.95	1945
395.5	581	35063	765	4338	3389	2514	279	180	91 27 4.17	1946
760.5	946	35428	1130	314	3754	167	265	86	91 27 54.40	1947
1126.5	1312	35794	1496	680	4120	533	253	222	91 28 44.76	1948 B
1491.5	1677	196	1861	1045	4485	898	240	128	91 29 34.98	1949

TABLE II.—Quantities which must be added to the Arguments of the Nineteenth Century (1801 to 1900, inclusive), in order to obtain the Arguments of the correspondent years of other centuries.

Year.	m.	I.	II.	III.	IV.	V.	VI.	VII.	VIII.
		d.	d.	d.	d.	d.	d.	d.	d.
— 200J	—68	1137. 66	...	3274	2112	20851	2015	7102	15086
— 100	—65	5385. 06	...	17564	2369	15635	274	9584	1906
0	—62	9632. 46	...	9619	2627	10419	4001	719	5294
100	—58	3120. 65	...	1673	2885	5203	2261	3201	8683
200	—55	7368. 05	...	15963	3142	20857	521	5684	12071
300	—51	856. 25	...	8017	3400	15641	4247	8166	15459
400	—48	5103. 64	...	72	3658	10425	2507	10648	2279
500	—45	9351. 04	...	14362	3915	5209	767	1783	5668
600	—41	2839. 24	...	6416	4173	20864	4493	4266	9056
700	—38	7086. 63	...	20706	4431	15648	2753	6748	12445
800	—34	574. 83	...	12761	4688	10432	1013	9231	15833
900	—31	4822. 23	...	4815	4946	5215	4740	365	2653
1000	—28	9069. 63	...	19105	5204	20870	3000	2848	6042
1100	—24	2557. 82	...	11160	5462	15654	1260	5330	9430
1200	—21	6805. 22	...	3214	5719	10438	4986	7813	12818
1300	—17	293. 42	...	17504	5977	5222	3246	10295	16207
1400	—14	4540. 81	...	9559	6235	6	1506	1430	3027
1500J	—11	8788. 2101	—109563	1613. 09	6492. 4	15660	5232. 2	3912	6415
1500G	—11	8778. 2101	—109573	1603. 09	6482. 4	15650	5222. 2	3902	6405
1600	—7	2266. 4064	—73048	15892. 87	6740. 1	10434	3482. 1	6385	9794
1700	—4	6512. 8037	—36524	7946. 44	6996. 8	5217	1741. 1	8866	13181
1900	3	4246. 3972	36524	14288. 78	256. 7	15653	3725. 4	2481	3387
2000	6	8493. 7945	73949	6343. 34	514. 4	10437	1985. 3	4964	6776
2100	10	1980. 9908	109573	20632. 13	771. 1	5220	244. 3	7445	10163
2200	13	6227. 3881	146097	12686. 69	1027. 8	3	3969. 6	9927	13551

Year.	IX.	X.	XI.	XII.	XIII.	XIV.	XV.	XVI.	XVII.	$\pi + \mu$
	d.	d.	d.	d.	d.	d.	d.	d.	d.	° / "
— 200J	1863	5129	24745	2252	2519	8569	1866	...	...	332 4 45
— 100	3720	7172	25306	1361	3930	2862	417	...	...	333 28 31
0	1244	9215	25868	469	952	7714	1681	...	...	334 52 17
100	3102	11258	26429	2696	2363	2007	232	...	...	336 16 3
200	626	1807	26991	1804	3774	6858	1495	...	...	337 39 49
300	2484	3850	27553	913	795	1151	46	...	...	339 3 34
400	8	5893	28114	21	2206	6002	1310	...	...	340 27 20
500	1865	7936	28676	2248	3617	295	2573	...	...	341 51 6
600	3723	9979	29237	1356	639	5146	1124	...	...	343 14 52
700	1247	528	29799	465	2049	9997	2388	...	...	344 38 38
800	3104	2571	30360	2691	3460	4291	939	...	...	346 2 24
900	628	4614	30922	1800	482	9142	2203	...	...	347 26 9
1000	2486	6657	31483	908	1893	3435	754	...	...	348 49 55
1100	10	8699	32045	17	3304	8286	2017	...	...	350 13 41
1200	1867	10742	32606	2243	325	2579	568	...	...	351 37 27
1300	3725	1291	33168	1352	1736	7430	1832	...	...	353 1 13
1400	1249	3334	33729	460	3147	1723	383	...	...	354 24 58
1500J	3106. 4	5377	34291	2687	169	6575	1646	84	135	355 48 44. 21
1500G	3096. 4	5367	34281	2677	159	6565	1636	74	125	355 48 42. 83
1600	620. 4	7410	34842	1785	1570	858	187	302	160	357 12 28. 65
1700	2476. 9	9452	35403	893	2979	5708	1450	151	195	358 36 14. 32
1900	1856. 5	2042	561	2226	1410	4850	1263	227	35	1 23 45. 68
2000	3714. 0	4085	1122	1334	2821	9701	2526	77	70	2 47 31. 49
2100	1237. 1	6127	1683	442	4231	3993	1076	304	105	4 11 17. 17
2200	3093. 6	8169	2243	2667	1251	8844	2339	154	139	5 35 2. 84

TABLE III.—Days from beginning of the year.

	Common year.	Bissextile year.
	d.	d.
Jan. o	0	— 1
Feb. o	31	30
Mar. o	59	59
Apr. o	90	90
May o	120	120
June o	151	151
July o	181	181
Aug. o	212	212
Sept. o	243	243
Oct. o	273	273
Nov. o	304	304
Dec. o	334	334

TABLE IV.—Motion of $\pi + ht$ for days.

d.	"
1	0.138
2	0.275
3	0.413
4	0.550
5	0.688
6	0.826
7	0.963
8	1.101
9	1.238
10	1.376
20	2.752
30	4.128
40	5.504
50	6.880
60	8.256
70	9.632
80	11.008
90	12.384
100	13.760
200	27.520
300	41.280

TABLE V.—Vertical Arguments for the tables of double entry.

m.	A.	B.	C.
—70	20.115	27.415	29.19
—60	0.098	57.784	16.45
—50	100.082	28.153	3.71
—40	80.066	58.523	50.97
—30	60.049	28.892	38.22
—20	40.033	59.261	25.48
—10	20.016	29.631	12.74
—9	13.015	10.668	3.47
—8	71.013	31.705	14.19
—7	9.011	52.741	24.92
—6	67.010	13.778	35.64
—5	5.008	34.815	46.37
—4	63.007	55.852	57.10
—3	1.005	16.889	7.82
—2	59.003	37.926	18.55
—1	117.002	58.963	29.27
0	55.000	20.000	40.00
1	112.998	41.037	50.73
2	50.997	2.074	1.45
3	108.995	23.111	12.18
4	46.993	44.148	22.90
5	104.992	5.185	33.63
6	42.990	26.222	44.36
7	100.989	47.259	55.08
8	38.987	8.295	5.81
9	96.985	29.332	16.53
10	99.984	30.369	47.26
20	79.967	0.739	34.52

TABLE VI.—Periods of the Arguments.

Arg.	Period.
	d.
I.	10759.200918
II.	No period, current days simply.
III.	22235.21846
IV.	7253.46065
V.	20870.52779
VI.	5466.43700
VII.	11347.53138
VIII.	16568.30622
IX.	4333.43713
X.	11494.02097
XI.	35963.47000
XII.	3118.04272
XIII.	4389.26548
XIV.	10557.96076
XV.	2712.42227
XVI.	378.09190
XVII.	229.49365
A.	120 units.
B.	60 units.
C.	60 units.

NOTE.—In forming the arguments, add to each of those designated by the Roman numerals I–XVII the number of days from the beginning of the year, which may be derived from Table III, and to $\pi + ht$ its motion for the same number of days concluded from Table IV. The vertical arguments are linear functions of m ; if m contains only a single figure they may be taken directly from Table V, but if m contains 2 figures the amount of change for negative or positive multiples of 10 in the value of m is given in the upper and lower portions of the table. Next, each argument, II excepted, must be rendered less than its period by subtracting the requisite multiple of the latter derived from Table VI. In fine, as many units must be added algebraically to m as periods have been subtracted from the value of Argument I. The latter value of m is that with which Table V must be entered.

Inequalities of the Fundamental Argument.

TABLE VII.

Arg. I.	Equation.	Arg. I.	Equation.	Arg. I.	Equation.
d.		d.		d.	
0	6287 + 68	3600	1547 - 115	7200	678 + 50
80	6355 + 51	3680	1432 - 111	7280	728 + 49
160	6406 + 36	3760	1321 - 108	7360	777 + 50
240	6442 + 21	3840	1213 - 103	7440	827 + 48
320	6463 + 7	3920	1110 - 100	7520	875 + 48
400	6470 - 9	4000	1010 - 95	7600	923 + 47
480	6461 - 21	4080	915 - 91	7680	970 + 47
560	6440 - 36	4160	824 - 87	7760	1017 + 45
640	6404 - 48	4240	737 - 82	7840	1062 + 44
720	6356 - 60	4320	655 - 78	7920	1106 + 42
800	6296 - 72	4400	577 - 72	8000	1148 + 40
880	6224 - 82	4480	505 - 68	8080	1188 + 39
960	6142 - 93	4560	437 - 63	8160	1227 + 36
1040	6049 - 102	4640	374 - 58	8240	1263 + 34
1120	5947 - 110	4720	316 - 53	8320	1297 + 32
1200	5837 - 119	4800	263 - 48	8400	1329 + 30
1280	5718 - 125	4880	215 - 42	8480	1359 + 26
1360	5593 - 132	4960	173 - 37	8560	1385 + 24
1440	5461 - 138	5040	136 - 32	8640	1409 + 21
1520	5323 - 142	5120	104 - 27	8720	1430 + 17
1600	5181 - 146	5200	77 - 21	8800	1447 + 14
1680	5035 - 150	5280	56 - 17	8880	1461 + 10
1760	4885 - 152	5360	39 - 11	8960	1471 + 7
1840	4733 - 155	5440	28 - 7	9040	1478 + 2
1920	4578 - 156	5520	21 - 1	9120	1480 - 2
2000	4422 - 157	5600	20 + 3	9200	1478 - 6
2080	4265 - 158	5680	23 + 7	9280	1472 - 10
2160	4107 - 157	5760	30 + 12	9360	1462 - 15
2240	3950 - 158	5840	42 + 15	9440	1447 - 20
2320	3792 - 156	5920	57 + 20	9520	1427 - 25
2400	3636 - 156	6000	77 + 23	9600	1402 - 29
2480	3480 - 153	6080	100 + 27	9680	1373 - 35
2560	3327 - 153	6160	127 + 30	9760	1338 - 40
2640	3174 - 150	6240	157 + 33	9840	1298 - 44
2720	3024 - 148	6320	190 + 36	9920	1254 - 50
2800	2876 - 146	6400	226 + 38	10000	1204 - 55
2880	2730 - 143	6480	264 + 40	10080	1149 - 59
2960	2587 - 141	6560	304 + 43	10160	1090 - 64
3040	2446 - 138	6640	347 + 44	10240	1026 - 69
3120	2308 - 135	6720	391 + 45	10320	957 - 73
3200	2173 - 131	6800	436 + 47	10400	884 - 77
3280	2042 - 129	6880	483 + 48	10480	807 - 80
3360	1913 - 125	6960	531 + 48	10560	727 - 84
3440	1788 - 122	7040	579 + 50	10640	643 - 87
3520	1666 - 119	7120	629 + 49	10720	556 - 89
3600	1547	7200	678	10800	467 - 91
				10880	376 - 91

TABLE VIII.

Year.	Equation.	Year.	Equation.
	d.		d.
-240	+11.42 - 2.99	660	+16.68 - 3.05
-220	8.43 - 2.87	680	13.63 - 3.02
-200	5.56 - 2.38	700	10.61 - 2.79
-180	3.18 - 1.99	720	7.82 - 2.35
-160	+1.19 - 1.77	740	5.47 - 2.12
-140	-0.58 - 1.26	760	3.35 - 1.83
-120	1.84 - 0.67	780	1.52 - 1.32
-100	2.51 - 0.34	800	+0.20 - 0.88
-80	2.85 - 0.10	820	-0.68 - 0.59
-60	2.75 - 0.82	840	1.27 - 0.06
-40	1.93 - 1.18	860	1.33 - 0.49
-20	-0.75 - 1.53	880	0.84 - 0.76
0	+0.78 - 2.21	900	-0.08 - 1.23
20	2.99 - 2.55	920	+1.15 - 1.80
40	5.54 - 2.75	940	2.95 - 2.03
60	8.29 - 3.24	960	4.98 - 2.35
80	11.53 - 3.52	980	7.33 - 2.81
100	15.05 - 3.51	1000	10.14 - 2.99
120	18.56 - 3.72	1020	13.13 - 3.10
140	22.28 - 3.85	1040	16.23 - 3.38
160	26.13 - 3.68	1060	19.61 - 3.46
180	29.81 - 3.53	1080	23.07 - 3.34
200	33.34 - 3.51	1100	26.41 - 3.38
220	36.85 - 3.18	1120	29.79 - 3.35
240	40.03 - 2.73	1140	33.14 - 3.04
260	42.76 - 2.56	1160	36.18 - 2.82
280	45.32 - 2.13	1180	39.00 - 2.68
300	47.45 - 1.48	1200	41.68 - 2.24
320	48.93 - 1.09	1220	43.92 - 1.80
340	50.12 - 0.75	1240	45.72 - 1.58
360	50.87 - 0.05	1260	47.30 - 1.08
380	50.92 - 0.33	1280	48.38 - 0.53
400	50.59 - 0.71	1300	48.91 - 0.22
420	49.88 - 1.31	1320	49.13 - 0.22
440	48.57 - 1.75	1340	48.91 - 0.80
460	46.82 - 1.99	1360	48.11 - 1.14
480	44.83 - 2.41	1380	46.97 - 1.47
500	42.42 - 2.82	1400	45.50 - 1.97
520	39.60 - 2.92	1420	43.53 - 2.30
540	36.68 - 3.09	1440	41.23 - 2.47
560	33.59 - 3.42	1460	38.76 - 2.80
580	30.17 - 3.37	1480	35.96 - 3.09
600	26.80 - 3.31	1500	32.87 - 3.07
620	23.49 - 3.48	1520	29.80 - 3.21
640	20.01 - 3.33	1540	26.59 - 3.36
660	+16.68	1560	+23.23

The quantities tabulated are in units of the fourth decimal of the day.

Inequalities of the Fundamental Argument.

TABLE VIII—Continued.

Arg. II.	Equation.	Arg. II.	Equation.	Arg. II.	Equation.	Arg. II.	Equation.
d.	d.	d.	d.	d.	d.	d.	d.
0	25.0054—4449	52800	4.5743—2515	83840	0.0092—30	101440	0.8085+397
960	24.5605—4435	53760	4.3228—2424	84160	0.0062—21	101760	0.8482+410
1920	24.1170—4415	54720	4.0804—2334	84480	0.0041—14	102080	0.8892+422
2880	23.6755—4385	55680	3.8470—2246	84800	0.0027—6	102400	0.9314+434
3840	23.2370—4348	56640	3.6224—2162	85120	0.0021+1	102720	0.9748+446
4800	22.8022—4308	57600	3.4062—2081	85440	0.0022—8	103040	1.0194+458
5760	22.3714—4265	58560	3.1981—2006	85760	0.0030—14	103360	1.0652+470
6720	21.9449—4223	59520	2.9975—1939	86080	0.0044—21	103680	1.1122+481
7680	21.5226—4182	60480	2.8036—1875	86400	0.0065—27	104000	1.1603+493
8640	21.1044—4145	61440	2.6161—1818	86720	0.0092—32	104320	1.2096+503
9600	20.6899—4115	62400	2.4343—1766	87040	0.0124—38	104640	1.2599+514
10560	20.2784—4090	63360	2.2577—1720	87360	0.0162—44	104960	1.3113+524
11520	19.8694—4076	64320	2.0857—1675	87680	0.0206—49	105280	1.3637+534
12480	19.4618—4067	65280	1.9182—1634	88000	0.0255—54	105600	1.4171+544
13440	19.0551—4068	66240	1.7548—1592	88320	0.0309—58	105920	1.4715+553
14400	18.6483—4075	67200	1.5956—1550	88640	0.0367—64	106240	1.5268+563
15360	18.2408—4088	68160	1.4406—1504	88960	0.0431—68	106560	1.5831+570
16320	17.8320—4102	69120	1.2902—1452	89280	0.0499—73	106880	1.6401+579
17280	17.4218—4115	70080	1.1450—1394	89600	0.0572—77	107200	1.6980+586
18240	17.0103—4123	71040	1.0056—1328	89920	0.0649—82	107520	1.7566+595
19200	16.5980—4131	72000	0.8728—1253	90240	0.0731—87	107840	1.8161+601
20160	16.1849—4129	72960	0.7475—399	90560	0.0818—91	108160	1.8762+608
21120	15.7720—4120	73280	0.7076—390	90880	0.0909—96	108480	1.9370+614
22080	15.3600—4101	73600	0.6686—381	91200	0.1005—101	108800	1.9984+620
23040	14.9499—4073	73920	0.6305—370	91520	0.1106—106	109120	2.0604+625
24000	14.5426—4038	74240	0.5935—361	91840	0.1212—112	109440	2.1229+631
24960	14.1388—3993	74560	0.5574—350	92160	0.1324—116	109760	2.1860+636
25920	13.7395—3941	74880	0.5224—339	92480	0.1440—123	110080	2.2496+641
26880	13.3454—3883	75200	0.4885—328	92800	0.1563—128	110400	2.3137+645
27840	12.9571—3820	75520	0.4557—318	93120	0.1691—134	110720	2.3782+650
28800	12.5751—3753	75840	0.4239—305	93440	0.1825—141	111040	2.4432+653
29760	12.1998—3683	76160	0.3934—294	93760	0.1966—148	111360	2.5085+658
30720	11.8315—3615	76480	0.3640—283	94080	0.2114—154	111680	2.5743+661
31680	11.4700—3552	76800	0.3357—271	94400	0.2268—162	112000	2.6404+665
32640	11.1148—3493	77120	0.3086—258	94720	0.2430—169	112320	2.7069+668
33600	10.7655—3438	77440	0.2828—247	95040	0.2599—177	112640	2.7737+671
34560	10.4217—3387	77760	0.2581—234	95360	0.2776—186	112960	2.8408+675
35520	10.0830—3346	78080	0.2347—222	95680	0.2962—195	113280	2.9083+679
36480	9.7484—3310	78400	0.2125—211	96000	0.3157—203	113600	2.9762+682
37440	9.4174—3281	78720	0.1914—198	96320	0.3360—213	113920	3.0444+686
38400	9.0893—3254	79040	0.1716—186	96640	0.3573—223	114240	3.1130+690
39360	8.7639—3232	79360	0.1530—174	96960	0.3796—232	114560	3.1820+693
40320	8.4407—3209	79680	0.1356—163	97280	0.4028—243	114880	3.2513+697
41280	8.1198—3187	80000	0.1193—150	97600	0.4271—254	115200	3.3210+702
42240	7.8011—3162	80320	0.1043—139	97920	0.4525—265	115520	3.3912+706
43200	7.4849—3135	80640	0.0904—129	98240	0.4790—275	115840	3.4618+710
44160	7.1714—3102	80960	0.0775—116	98560	0.5065—288	116160	3.5328+715
45120	6.8612—3065	81280	0.0659—106	98880	0.5353—299	116480	3.6043+721
46080	6.5547—3020	81600	0.0553—96	99200	0.5652—310	116800	3.6764+726
47040	6.2527—2969	81920	0.0457—85	99520	0.5962—323	117120	3.7490+731
48000	5.9558—2910	82240	0.0372—75	99840	0.6285—336	117440	3.8221+738
48960	5.6648—2844	82560	0.0297—65	100160	0.6621—347	117760	3.8959+743
49920	5.3804—2769	82880	0.0232—56	100480	0.6968—360	118080	3.9702+751
50880	5.1035—2689	83200	0.0176—47	100800	0.7328—372	118400	4.0453+757
51840	4.8346—2603	83520	0.0129—37	101120	0.7700—385	118720	4.1210+765
52800	4.5743	83840	0.0092	101440	0.8085	119040	4.1975

Inequalities of the Fundamental Argument.

TABLE VIII—Continued.

Arg. II.	Equation.	Arg. II.	Equation.	Arg. II.	Equation.	Year.	Equation.
d.	d.	d.	d.	d.	d.		d.
119040	4. 1975 + 773	136640	9. 7257 + 1153	169600	23. 4174 + 4217	2140	41. 58 + 1. 95
119360	4. 2748 780	136960	9. 8410 1154	170560	23. 8391 4239	2160	43. 53 1. 69
119680	4. 3528 788	137280	9. 9564 1156	171520	24. 2630 4264	2180	45. 22 1. 15
120000	4. 4316 797	137600	10. 0720 1157	172480	24. 6804 4289	2200	46. 37 0. 75
120320	4. 5113 806	137920	10. 1877 1159	173440	25. 1183 4312	2220	47. 12 + 0. 46
120640	4. 5919 815	138240	10. 3036 1161	174400	25. 5495 4334	2240	47. 58 — 0. 05
120960	4. 6734 824	138560	10. 4197 1162	175360	25. 9829 4350	2260	47. 53 0. 52
121280	4. 7558 834	138880	10. 5359 1165	176320	26. 4179 4360	2280	47. 01 — 0. 81
121600	4. 8392 844	139200	10. 6524 1167	177280	26. 8539 4362	2300	46. 20
121920	4. 9236 854	139520	10. 7691 1170	178240	27. 2901 4354		
122240	5. 0090 863	139840	10. 8861 1172	179200	27. 7255 4338		
122560	5. 0953 875	140160	11. 0033 1175	180160	28. 1593 4314		
122880	5. 1828 884	140480	11. 1208 1178	181120	28. 5907 4280		
123200	5. 2712 895	140800	11. 2386 1182	182080	29. 0187 4240		
123520	5. 3607 906	141120	11. 3568 1185	183040	29. 4427 4193		
123840	5. 4513 916	141440	11. 4753 1189	184000	29. 8620 4144		
124160	5. 5429 926	141760	11. 5942 1193	184960	30. 2764 4091		
124480	5. 6355 938	142080	11. 7135 1198	185920	30. 6855 4037		
124800	5. 7293 948	142400	11. 8333 1202	186880	31. 0892 3985		
125120	5. 8241 958	142720	11. 9535 1207	187840	31. 4877 3934		
125440	5. 9199 968	143040	12. 0742 1212	188800	31. 8811 3887		
125760	6. 0167 979	143360	12. 1954 1217	189760	32. 2698 3849		
126080	6. 1146 989	143680	12. 3171 1223	190720	32. 6547 3815		
126400	6. 2135 998	144000	12. 4394 1229	191680	33. 0362 3789		
126720	6. 3133 1008	144320	12. 5623 1234	192640	33. 4151 3771		
127040	6. 4141 1018	144640	12. 6857 1241	193600	33. 7922 3760		
127360	6. 5159 1026	144960	12. 8098 1247	194560	34. 1682 3754		
127680	6. 6185 1035	145280	12. 9345 1253	195520	34. 5436 3752		
128000	6. 7220 1044	145600	13. 0598 1260	196480	34. 9188 3752		
128320	6. 8264 1051	145920	13. 1858 1266	197440	35. 2940 3748		
128640	6. 9315 1060	146240	13. 3124 1273	198400	35. 6688 3742		
128960	7. 0375 1067	146560	13. 4397 1279	199360	36. 0430 3729		
129280	7. 1442 1074	147520	13. 8259 1286	200320	36. 4159 3710		
129600	7. 2516 1081	148480	14. 2178 1293	201280	36. 7869 3679		
129920	7. 3597 1086	149440	14. 6158 1300	202240	37. 1548 3638		
130240	7. 4683 1093	150400	15. 0196 1307	203200	37. 5186 3589		
130560	7. 5776 1099	151360	15. 4286 1314	204160	37. 8775 3530		
130880	7. 6875 1103	152320	15. 8423 1321	205120	38. 2305 3462		
131200	7. 7978 1109	153280	16. 2600 1328	206080	38. 5767 3385		
131520	7. 9087 1113	154240	16. 6809 1335	207040	38. 9152 3302		
131840	8. 0200 1117	155200	17. 1042 1342	208000	39. 2454 3215		
132160	8. 1317 1121	156160	17. 5291 1349	208960	39. 5669 3125		
132480	8. 2438 1125	157120	17. 9547 1356	209920	39. 8794 3037		
132800	8. 3563 1128	158080	18. 3802 1363	210880	40. 1831 2951		
133120	8. 4691 1132	159040	18. 8051 1370	211840	40. 4782 2870		
133440	8. 5823 1134	160000	19. 2289 1377	212800	40. 7652 2799		
133760	8. 6957 1136	160960	19. 6513 1384	213760	41. 0451 2735		
134080	8. 8093 1139	161920	20. 0723 1391	214720	41. 3186 2683		
134400	8. 9232 1142	162880	20. 4919 1398	215680	41. 5869 2640		
134720	9. 0374 1143	163840	20. 9102 1405	216640	41. 8509 2604		
135040	9. 1517 1144	164800	21. 3277 1412	217600	42. 1113 2577		
135360	9. 2661 1147	165760	21. 7446 1419	218560	42. 3690 + 2553		
135680	9. 3808 1148	166720	22. 1616 1426	219520			
136000	9. 4956 1150	167680	22. 5791 1433				
136320	9. 6106 + 1151	168640	22. 9975 + 1440				
136640	9. 7257	169600	23. 4174				

Inequalities of the Fundamental Argument.

TABLE IX.

Arg. III.	Equation.	Arg. III.	Equation.	Arg. III.	Equation.	Arg. III.	Equation.
d.		d.		d.		d.	
0	6.7263 -816	2240	1.5842 -712	4480	1.3195 +733	6720	8.4689 +1554
40	6.6447 829	2280	1.5130 695	4520	1.3928 +733	6760	8.6243 +1551
80	6.5618 843	2320	1.4435 676	4560	1.4688 787	6800	8.7794 1548
120	6.4775 855	2360	1.3759 657	4600	1.5475 814	6840	8.9342 1543
160	6.3920 868	2400	1.3102 638	4640	1.6289 839	6880	9.0885 1539
200	6.3052 880	2440	1.2464 618	4680	1.7128 865	6920	9.2424 1534
240	6.2172 891	2480	1.1846 597	4720	1.7993 891	6960	9.3958 1527
280	6.1281 902	2520	1.1249 577	4760	1.8884 917	7000	9.5485 1521
320	6.0379 912	2560	1.0672 555	4800	1.9801 941	7040	9.7006 1513
360	5.9467 922	2600	1.0117 533	4840	2.0742 966	7080	9.8519 1505
400	5.8545 931	2640	9584 512	4880	2.1708 990	7120	10.0024 1496
440	5.7614 939	2680	9072 489	4920	2.2698 1015	7160	10.1520 1487
480	5.6675 948	2720	8583 466	4960	2.3713 1037	7200	10.3007 1476
520	5.5727 955	2760	8117 443	5000	2.4750 1062	7240	10.4483 1465
560	5.4772 962	2800	7674 420	5040	2.5812 1084	7280	10.5948 1454
600	5.3810 968	2840	7254 395	5080	2.6896 1106	7320	10.7402 1442
640	5.2842 974	2880	6859 372	5120	2.8002 1129	7360	10.8844 1429
680	5.1868 979	2920	6487 346	5160	2.9131 1150	7400	11.0273 1415
720	5.0889 984	2960	6141 322	5200	3.0281 1171	7440	11.1688 1402
760	4.9905 987	3000	5819 296	5240	3.1452 1192	7480	11.3090 1386
800	4.8918 991	3040	5523 271	5280	3.2644 1212	7520	11.4476 1371
840	4.7927 994	3080	5252 245	5320	3.3856 1231	7560	11.5847 1355
880	4.6933 995	3120	5007 219	5360	3.5087 1251	7600	11.7202 1339
920	4.5938 997	3160	4788 192	5400	3.6338 1270	7640	11.8541 1321
960	4.4941 999	3200	4596 166	5440	3.7608 1288	7680	11.9862 1303
1000	4.3942 998	3240	4430 139	5480	3.8896 1306	7720	12.1165 1285
1040	4.2944 998	3280	4291 112	5520	4.0202 1323	7760	12.2450 1266
1080	4.1946 997	3320	4179 85	5560	4.1525 1339	7800	12.3716 1246
1120	4.0949 996	3360	4094 57	5600	4.2864 1356	7840	12.4962 1226
1160	3.9953 993	3400	4037 30	5640	4.4220 1371	7880	12.6188 1205
1200	3.8960 991	3440	4007 2	5680	4.5591 1386	7920	12.7393 1184
1240	3.7969 987	3480	4005 +27	5720	4.6977 1401	7960	12.8577 1162
1280	3.6982 983	3520	4032 54	5760	4.8378 1414	8000	12.9739 1140
1320	3.5999 979	3560	4086 82	5800	4.9792 1428	8040	13.0879 1117
1360	3.5020 974	3600	4168 111	5840	5.1220 1440	8080	13.1996 1093
1400	3.4046 968	3640	4279 139	5880	5.2660 1453	8120	13.3089 1070
1440	3.3078 961	3680	4418 168	5920	5.4113 1463	8160	13.4159 1045
1480	3.2117 954	3720	4586 196	5960	5.5576 1475	8200	13.5204 1021
1520	3.1163 947	3760	4782 225	6000	5.7051 1484	8240	13.6225 995
1560	3.0216 939	3800	5007 254	6040	5.8535 1494	8280	13.7220 969
1600	2.9277 930	3840	5261 282	6080	6.0029 1503	8320	13.8189 943
1640	2.8347 920	3880	5543 311	6120	6.1532 1511	8360	13.9132 916
1680	2.7427 910	3920	5854 340	6160	6.3043 1519	8400	14.0048 889
1720	2.6517 900	3960	6194 368	6200	6.4562 1526	8440	14.0937 862
1760	2.5617 889	4000	6562 397	6240	6.6088 1532	8480	14.1799 834
1800	2.4728 878	4040	6959 426	6280	6.7620 1537	8520	14.2633 806
1840	2.3850 864	4080	7385 454	6320	6.9157 1542	8560	14.3439 777
1880	2.2986 853	4120	7839 483	6360	7.0699 1547	8600	14.4216 748
1920	2.2133 838	4160	8322 511	6400	7.2246 1550	8640	14.4964 719
1960	2.1295 825	4200	8833 539	6440	7.3796 1553	8680	14.5683 689
2000	2.0470 811	4240	9372 568	6480	7.5349 1555	8720	14.6372 659
2040	1.9659 795	4280	9940 596	6520	7.6904 1557	8760	14.7031 629
2080	1.8864 780	4320	1.0536 623	6560	7.8461 1557	8800	14.7660 598
2120	1.8084 764	4360	1.1159 651	6600	8.0019 1557	8840	14.8258 568
2160	1.7320 747	4400	1.1810 677	6640	8.1576 1557	8880	14.8826 536
2200	1.6573 -731	4440	1.2487 +708	6680	8.3133 +1556	8920	14.9362 +506
2240	1.5842 -731	4480	1.3195 +708	6720	8.4689 +1556	8960	14.9868 +506

Inequalities of the Fundamental Argument.

TABLE IX—Continued.

Arg. III.	Equation.	Arg. III.	Equation.	Arg. III.	Equation.	Arg. III.	Equation.
d.		d.		d.		d.	
8960	14. 9868 + 473	11200	12. 7377 — 1207	13440	4. 4686 — 1407	15680	833 + 4
9000	15. 0341 + 442	11240	12. 6170 — 1228	13480	4. 3279 — 1393	15720	837 + 33
9040	15. 0783 410	11280	12. 4942 1249	13520	4. 1886 1377	15760	870 61
9080	15. 1193 378	11320	12. 3693 1266	13560	4. 0509 1361	15800	931 90
9120	15. 1571 346	11360	12. 2427 1288	13600	3. 9148 1345	15840	1021 118
9160	15. 1917 313	11400	12. 1139 1305	13640	3. 7803 1328	15880	1139 146
9200	15. 2230 280	11440	11. 9834 1325	13680	3. 6475 1310	15920	1285 174
9240	15. 2510 248	11480	11. 8509 1344	13720	3. 5165 1291	15960	1459 201
9280	15. 2758 215	11520	11. 7165 1359	13760	3. 3874 1273	16000	1660 229
9320	15. 2973 182	11560	11. 5806 1375	13800	3. 2601 1254	16040	1889 256
9360	15. 3155 149	11600	11. 4431 1392	13840	3. 1347 1234	16080	2145 283
9400	15. 3304 116	11640	11. 3039 1406	13880	3. 0113 1214	16120	2428 310
9440	15. 3420 82	11680	11. 1633 1421	13920	2. 8899 1193	16160	2738 336
9480	15. 3502 50	11720	11. 0212 1435	13960	2. 7706 1172	16200	3074 362
9520	15. 3552 + 17	11760	10. 8777 1448	14000	2. 6534 1150	16240	3436 387
9560	15. 3569 — 17	11800	10. 7329 1461	14040	2. 5384 1129	16280	3823 413
9600	15. 3552 — 50	11840	10. 5868 1472	14080	2. 4255 1105	16320	4236 438
9640	15. 3502 84	11880	10. 4396 1485	14120	2. 3150 1083	16360	4674 462
9680	15. 3418 116	11920	10. 2911 1494	14160	2. 2067 1060	16400	5136 487
9720	15. 3302 149	11960	10. 1417 1505	14200	2. 1007 1035	16440	5623 510
9760	15. 3153 183	12000	9. 9912 1515	14240	1. 9972 1012	16480	6133 534
9800	15. 2970 215	12040	9. 8397 1523	14280	1. 8960 986	16520	6667 557
9840	15. 2755 248	12080	9. 6874 1531	14320	1. 7974 962	16560	7224 579
9880	15. 2507 281	12120	9. 5343 1539	14360	1. 7012 937	16600	7803 601
9920	15. 2226 313	12160	9. 3804 1545	14400	1. 6075 911	16640	8404 624
9960	15. 1913 346	12200	9. 2259 1552	14440	1. 5164 885	16680	9028 644
10000	15. 1567 378	12240	9. 0707 1557	14480	1. 4279 859	16720	9672 666
10040	15. 1189 410	12280	8. 9150 1561	14520	1. 3420 833	16760	1. 0338 685
10080	15. 0779 443	12320	8. 7589 1566	14560	1. 2587 805	16800	1. 1023 706
10120	15. 0336 473	12360	8. 6023 1569	14600	1. 1782 779	16840	1. 1729 724
10160	14. 9863 506	12400	8. 4454 1572	14640	1. 1003 751	16880	1. 2453 744
10200	14. 9357 537	12440	8. 2882 1574	14680	1. 0252 723	16920	1. 3197 762
10240	14. 8820 567	12480	8. 1308 1575	14720	9529 696	16960	1. 3959 780
10280	14. 8253 599	12520	7. 9733 1576	14760	8833 667	17000	1. 4739 797
10320	14. 7654 629	12560	7. 8158 1576	14800	8166 639	17040	1. 5536 813
10360	14. 7025 659	12600	7. 6582 1575	14840	7527 611	17080	1. 6349 830
10400	14. 6366 690	12640	7. 5007 1573	14880	6916 582	17120	1. 7179 845
10440	14. 5676 718	12680	7. 3434 1572	14920	6334 554	17160	1. 8024 861
10480	14. 4958 748	12720	7. 1862 1569	14960	5780 524	17200	1. 8885 874
10520	14. 4210 778	12760	7. 0293 1565	15000	5256 496	17240	1. 9759 889
10560	14. 3432 805	12800	6. 8728 1561	15040	4760 466	17280	2. 0648 902
10600	14. 2627 835	12840	6. 7167 1557	15080	4294 437	17320	2. 1550 915
10640	14. 1792 862	12880	6. 5610 1551	15120	3857 407	17360	2. 2465 926
10680	14. 0930 889	12920	6. 4059 1544	15160	3450 378	17400	2. 3391 939
10720	14. 0041 917	12960	6. 2515 1539	15200	3072 349	17440	2. 4330 949
10760	13. 9124 943	13000	6. 0976 1531	15240	2723 319	17480	2. 5279 959
10800	13. 8181 970	13040	5. 9445 1522	15280	2404 290	17520	2. 6238 969
10840	13. 7211 995	13080	5. 7923 1514	15320	2114 260	17560	2. 7207 978
10880	13. 6216 1021	13120	5. 6409 1505	15360	1854 230	17600	2. 8185 987
10920	13. 5195 1046	13160	5. 4904 1494	15400	1624 201	17640	2. 9172 994
10960	13. 4149 1070	13200	5. 3410 1484	15440	1423 172	17680	3. 0166 1001
11000	13. 3079 1094	13240	5. 1926 1473	15480	1251 142	17720	3. 1167 1008
11040	13. 1985 1118	13280	5. 0453 1461	15520	1109 113	17760	3. 2175 1014
11080	13. 0867 1141	13320	4. 8992 1449	15560	996 83	17800	3. 3189 1019
11120	12. 9726 1164	13360	4. 7543 1435	15600	913 54	17840	3. 4208 1024
11160	12. 8562 — 1185	13400	4. 6108 — 1422	15640	859 — 26	17880	3. 5232 + 1027
11200	12. 7377	13440	4. 4686	15680	833	17920	3. 6259

Inequalities of the Fundamental Argument.

TABLE IX—Continued.

Arg. III.	Equation.	Arg. III.	Equation.
d.		d.	
17920	3. 6259 + 1031	20160	8. 1707 + 322
17960	3. 7290 + 1034	20200	8. 2029 + 298
18000	3. 8324 + 1036	20240	8. 2327 + 275
18040	3. 9360 + 1037	20280	8. 2602 + 250
18080	4. 0397 + 1037	20320	8. 2852 + 226
18120	4. 1434 + 1038	20360	8. 3078 + 201
18160	4. 2472 + 1038	20400	8. 3279 + 177
18200	4. 3510 + 1036	20440	8. 3456 + 152
18240	4. 4546 + 1034	20480	8. 3608 + 128
18280	4. 5580 + 1032	20520	8. 3736 + 102
18320	4. 6612 + 1029	20560	8. 3838 + 78
18360	4. 7641 + 1025	20600	8. 3916 + 54
18400	4. 8666 + 1021	20640	8. 3970 + 28
18440	4. 9687 + 1016	20680	8. 3998 + 4
18480	5. 0703 + 1010	20720	8. 4002 - 22
18520	5. 1713 + 1004	20760	8. 3980 + 46
18560	5. 2717 + 997	20800	8. 3934 + 70
18600	5. 3714 + 991	20840	8. 3864 + 96
18640	5. 4705 + 981	20880	8. 3768 + 120
18680	5. 5686 + 974	20920	8. 3648 + 145
18720	5. 6660 + 964	20960	8. 3503 + 169
18760	5. 7624 + 955	21000	8. 3334 + 193
18800	5. 8579 + 944	21040	8. 3141 + 218
18840	5. 9523 + 934	21080	8. 2923 + 241
18880	6. 0457 + 922	21120	8. 2682 + 266
18920	6. 1379 + 910	21160	8. 2416 + 289
18960	6. 2289 + 898	21200	8. 2127 + 313
19000	6. 3187 + 884	21240	8. 1814 + 336
19040	6. 4071 + 871	21280	8. 1478 + 359
19080	6. 4942 + 857	21320	8. 1119 + 382
19120	6. 5799 + 842	21360	8. 0737 + 404
19160	9. 6641 + 828	21400	8. 0333 + 427
19200	6. 7469 + 812	21440	7. 9906 + 449
19240	6. 8281 + 795	21480	7. 9457 + 471
19280	6. 9076 + 780	21520	7. 8986 + 493
19320	6. 9856 + 762	21560	7. 8493 + 513
19360	7. 0618 + 745	21600	7. 7980 + 535
19400	7. 1363 + 727	21640	7. 7445 + 555
19440	7. 2090 + 709	21680	7. 6890 + 576
19480	7. 2799 + 690	21720	7. 6314 + 595
19520	7. 3489 + 671	21760	7. 5719 + 615
19560	7. 4160 + 652	21800	7. 5104 + 634
19600	7. 4812 + 631	21840	7. 4470 + 653
19640	7. 5443 + 612	21880	7. 3817 + 671
19680	7. 6055 + 591	21920	7. 3146 + 689
19720	7. 6646 + 571	21960	7. 2457 + 707
19760	7. 7217 + 549	22000	7. 1750 + 724
19800	7. 7766 + 527	22040	7. 1026 + 740
19840	7. 8293 + 506	22080	7. 0286 + 757
19880	7. 8799 + 484	22120	6. 9529 + 772
19920	7. 9283 + 461	22160	6. 8757 + 788
19960	7. 9744 + 439	22200	6. 7969 + 803
20000	8. 0183 + 416	22240	6. 7166 + 817
20040	8. 0599 + 392	22280	6. 6349 + 830
20080	8. 0991 + 370	22320	6. 5519 + 845
20120	8. 1361 + 346	22360	6. 4674 + 857
20160	8. 1707 + 322	22400	6. 3817 + 872

TABLE X.

Arg. IV.	Equation.	Arg. IV.	Equation.
d.		d.	
0	4742 - 87	2200	997 + 134
40	4655 - 94	2240	1131 + 142
80	4561 - 101	2280	1273 + 150
120	4460 - 108	2320	1423 + 158
160	4352 - 114	2360	1581 + 165
200	4238 - 119	2400	1746 + 172
240	4119 - 125	2440	1918 + 177
280	3994 - 130	2480	2095 + 183
320	3864 - 134	2520	2278 + 189
360	3730 - 138	2560	2467 + 192
400	3592 - 142	2600	2659 + 196
440	3450 - 144	2640	2855 + 199
480	3306 - 147	2680	3054 + 201
520	3159 - 149	2720	3255 + 203
560	3010 - 150	2760	3458 + 203
600	2860 - 151	2800	3661 + 203
640	2709 - 152	2840	3864 + 201
680	2557 - 151	2880	4065 + 200
720	2406 - 150	2920	4265 + 197
760	2256 - 149	2960	4462 + 193
800	2107 - 148	3000	4655 + 189
840	1959 - 144	3040	4844 + 182
880	1815 - 142	3080	5026 + 177
920	1673 - 139	3120	5203 + 168
960	1534 - 134	3160	5371 + 161
1000	1400 - 130	3200	5532 + 150
1040	1270 - 125	3240	5682 + 141
1080	1145 - 121	3280	5823 + 128
1120	1024 - 114	3320	5951 + 116
1160	910 - 108	3360	6067 + 102
1200	802 - 101	3400	6169 + 88
1240	701 - 93	3440	6257 + 73
1280	608 - 87	3480	6330 + 56
1320	521 - 78	3520	6386 + 39
1360	443 - 70	3560	6425 + 21
1400	373 - 62	3600	6446 + 3
1440	311 - 53	3640	6449 + 17
1480	258 - 43	3680	6432 + 36
1520	215 - 34	3720	6396 + 57
1560	181 - 25	3760	6339 + 77
1600	156 - 15	3800	6262 + 98
1640	141 - 5	3840	6164 + 119
1680	136 - 6	3880	6045 + 138
1720	142 + 15	3920	5907 + 159
1760	157 + 26	3960	5748 + 178
1800	183 + 36	4000	5570 + 196
1840	219 + 46	4040	5374 + 212
1880	265 + 57	4080	5162 + 228
1920	322 + 67	4120	4934 + 241
1960	389 + 77	4160	4693 + 252
2000	466 + 87	4200	4441 + 261
2040	553 + 97	4240	4180 + 268
2080	650 + 106	4280	3912 + 271
2120	756 + 116	4320	3641 + 273
2160	872 + 125	4360	3368 + 271
2200	997 + 134	4400	3097 + 271

Inequalities of the Fundamental Argument.

TABLE X—Continued.

Arg. IV.	Equation.	Arg. IV.	Equation.
d.		d.	
4400	3097—267	5880	2648+164
4440	2830—260	5920	2812+162
4480	2570—252	5960	2974+160
4520	2318—241	6000	3134+158
4560	2077—227	6040	3292+155
4600	1850—214	6080	3447+152
4640	1636—197	6120	3599+147
4680	1439—180	6160	3746+141
4720	1259—163	6200	3887+137
4760	1096—144	6240	4024+130
4800	952—125	6280	4154+124
4840	827—106	6320	4278+117
4880	721—88	6360	4395+110
4920	633—68	6400	4505+102
4960	565—50	6440	4607+94
5000	515—31	6480	4701+86
5040	484—14	6520	4787+77
5080	470+3	6560	4864+68
5120	473+20	6600	4932+60
5160	493+35	6640	4992+50
5200	528—50	6680	5042+41
5240	578—63	6720	5083+31
5280	641—77	6760	5114+22
5320	718—89	6800	5136+13
5360	807—100	6840	5149+3
5400	907—111	6880	5152—7
5440	1018—119	6920	5145—15
5480	1137—128	6960	5130—26
5520	1265—136	7000	5104—34
5560	1401—143	7040	5070—43
5600	1544—147	7080	5027—52
5640	1691—153	7120	4975—60
5680	1844—156	7160	4915—69
5720	2000—160	7200	4846—77
5760	2160—162	7240	4769—84
5800	2322—163	7280	4685—91
5840	2485+163	7320	4594
5880	2648+163		

TABLE XI.

Arg. V.	Equation.	Arg. V.	Equation.	Arg. V.	Equation.
d.		d.		d.	
0	5556—52	7040	1045—91	14080	2515+146
160	5504—56	7200	954—88	14240	2661+147
320	5448—62	7360	866—83	14400	2808+148
480	5386—66	7520	783—79	14560	2956+147
640	5320—71	7680	704—75	14720	3103+147
800	5249—76	7840	629—70	14880	3250+145
960	5173—79	8000	559—65	15040	3395+145
1120	5094—83	8160	494—59	15200	3540+142
1280	5011—88	8320	435—54	15360	3682+140
1440	4923—90	8480	381—49	15520	3822+138
1600	4833—94	8640	332—42	15680	3960+134
1760	4739—97	8800	290—37	15840	4094+132
1920	4642—100	8960	253—30	16000	4226+127
2080	4542—103	9120	223—23	16160	4353+124
2240	4439—105	9280	200—17	16320	4477+119
2400	4334—107	9440	183—11	16480	4596+114
2560	4227—110	9600	172—3	16640	4710+110
2720	4117—111	9760	169+4	16800	4820+104
2880	4006—114	9920	173+11	16960	4924+99
3040	3892—114	10080	184+18	17120	5023+94
3200	3778—117	10240	202+25	17280	5117+87
3360	3661—117	10400	227+32	17440	5204+82
3520	3544—118	10560	259+40	17600	5286+76
3680	3426—120	10720	299+47	17760	5362+69
3840	3306—119	10880	346+54	17920	5431+63
4000	3187—121	11040	400+61	18080	5494+56
4160	3066—120	11200	461+68	18240	5550+50
4320	2946—121	11360	529+75	18400	5600+44
4480	2825—120	11520	604+81	18560	5644+36
4640	2705—120	11680	685+88	18720	5680+31
4800	2585—120	11840	773+94	18880	5711+23
4960	2465—119	12000	867+100	19040	5734+17
5120	2346—118	12160	967+105	19200	5751+11
5280	2228—117	12320	1072+112	19360	5762+4
5440	2111—116	12480	1184+116	19520	5766+2
5600	1995—114	12640	1300+121	19680	5764+9
5760	1881—113	12800	1421+125	19840	5755+15
5920	1768—111	12960	1546+129	20000	5740+21
6080	1657—109	13120	1675+134	20160	5719+27
6240	1548—106	13280	1809+136	20320	5692+33
6400	1442—104	13440	1945+139	20480	5659+38
6560	1338—101	13600	2084+142	20640	5621+44
6720	1237—98	13760	2226+143	20800	5577+49
6880	1139—94	13920	2369+146	20960	5528+55
7040	1045—94	14080	2515+146	21120	5473+59
				21280	5414

The quantities tabulated are in units of the fourth decimal of a day.

Inequalities of the Fundamental Argument.

TABLE XII.

Arg. VI.	Equation.	Arg. VI.	Equation.
d.		d.	
0	1385-178	2880	3617+158
80	1207 165	2960	3775 148
160	1042 154	3040	3923 136
240	888 139	3120	4059 124
320	749 123	3200	4183 110
400	626 108	3280	4293 94
480	518 90	3360	4387 79
560	428 73	3440	4466 61
640	355 54	3520	4527 42
720	301 37	3600	4569 24
800	264-18	3680	4593+4
880	246 0	3760	4597-14
960	246+18	3840	4583 35
1040	264 36	3920	4548 54
1120	300 52	4000	4494 73
1200	352 69	4080	4421 92
1280	421 83	4160	4329 109
1360	504 98	4240	4220 126
1440	602 112	4320	4094 141
1520	714 124	4400	3953 156
1600	838 137	4480	3797 168
1680	975 146	4560	3629 179
1760	1121 156	4640	3450 189
1840	1277 164	4720	3261 196
1920	1441 172	4800	3065 202
2000	1613 178	4880	2863 206
2080	1791 182	4960	2657 208
2160	1973 186	5040	2449 208
2240	2159 188	5120	2241 206
2320	2347 189	5200	2035 203
2400	2536 189	5280	1832 197
2480	2725 187	5360	1635 190
2560	2912 185	5440	1445 180
2640	3097 179	5520	1265 170
2720	3276 174	5600	1095-157
2800	3450	5680	938
2880	3617+167		

TABLE XIII.

Arg. VII.	Equation.	Arg. VII.	Equation.
d.		d.	
0	1025+150	5920	2734-159
160	1175 157	6080	2575 164
320	1332 163	6240	2411 166
480	1495 166	6400	2245 169
640	1661 170	6560	2076 169
800	1831 170	6720	1907 169
960	2001 171	6880	1738 166
1120	2172 169	7040	1572 163
1280	2341 167	7200	1409 159
1440	2508 162	7360	1250 152
1600	2670 157	7520	1098 146
1760	2827 151	7680	952 138
1920	2978 143	7840	814 128
2080	3121 134	8000	686 118
2240	3255 124	8160	568 108
2400	3379 113	8320	460 95
2560	3492 101	8480	365 82
2720	3593 89	8640	283 69
2880	3682 76	8800	214 55
3040	3758 61	8960	159 41
3200	3819 47	9120	118 26
3360	3866 33	9280	92 11
3520	3899 18	9440	81+4
3680	3917 2	9600	85+4
3840	3919-12	9760	104 19
4000	3907 28	9920	138 48
4160	3879 42	10080	186 63
4320	3837 57	10240	249 77
4480	3780 70	10400	326 90
4640	3710 84	10560	416 102
4800	3626 96	10720	518 115
4960	3530 109	10880	633 125
5120	3421 119	11040	758 134
5280	3302 129	11200	892 144
5440	3173 139	11360	1036 151
5600	2034 147	11520	1187+158
5760	2887-153	11680	1345
5920	2734		

TABLE XIV.

Arg. VIII.	Equation.
d.	
0	1579+92
160	1671 101
320	1772 107
480	1879 111
640	1990 112
800	2102 109
960	2211 103
1120	2314 95
1280	2409 85
1440	2494 73
1600	2567 59
1760	2626 43
1920	2669 27
2080	2696+11
2240	2707-7
2400	2700 23
2560	2677 39
2720	2638 54
2880	2584 70
3040	2514 83
3200	2431 95
3360	2336 105
3520	2231 114
3680	2117 122
3840	1995 127
4000	1868 131
4160	1737 132
4320	1605 131
4480	1474 130
4640	1344 125
4800	1219 120
4960	1099 112
5120	987 103
5280	884 93
5440	791 81
5600	710 68
5760	642 55
5920	587 40
6080	547 25
6240	522 9
6400	513+6
6560	519 21
6720	540 37
6880	577 51
7040	628 66
7200	694 79
7360	773 92
7520	865 103
7680	968 114
7840	1082 122
8000	1204 131
8160	1335 137
8320	1472 141
8480	1613+141

The quantities tabulated are in units of the fourth decimal of a day.

Inequalities of the Fundamental Argument.

TABLE XIV—Cont'd.

Arg. VIII.	Equation.
d.	
8480	1613 +145
8640	1758 +147
8800	1905 +147
8960	2052 +147
9120	2199 +143
9280	2342 +140
9440	2482 +134
9600	2616 +127
9760	2743 +120
9920	2863 +110
10080	2973 +101
10240	3074 +89
10400	3163 +78
10560	3241 +65
10720	3306 +52
10880	3358 +39
11040	3397 +25
11200	3422 +11
11360	3433 +3
11520	3430 +17
11680	3413 +31
11840	3382 +44
12000	3338 +56
12160	3282 +68
12320	3214 +80
12480	3134 +90
12640	3044 +99
12800	2945 +107
12960	2838 +113
13120	2725 +119
13280	2606 +122
13440	2484 +124
13600	2360 +125
13760	2235 +123
13920	2112 +121
14080	1991 +115
14240	1876 +109
14400	1767 +101
14560	1666 +90
14720	1576 +80
14880	1496 +66
15040	1430 +53
15200	1377 +37
15360	1340 +21
15520	1319 +5
15680	1314 +11
15840	1325 +28
16000	1353 +45
16160	1398 +60
16320	1458 +74
16480	1532 +87
16640	1619 +96
16800	1715 +105
16960	1820 +105

TABLE XV.

Arg. IX.	Equation.	Arg. IX.	Equation.
d.		d.	
0	218 -25	2200	2007 +25
40	193 -22	2240	2032 +22
80	171 -18	2280	2054 +19
120	153 -16	2320	2073 +15
160	137 -12	2360	2088 +12
200	125 -9	2400	2100 +8
240	116 -5	2440	2108 +6
280	111 -3	2480	2114 +1
320	108 -1	2520	2115 -2
360	109 +4	2560	2113 -6
400	113 +7	2600	2107 -9
440	120 +10	2640	2098 -12
480	130 +13	2680	2086 -16
520	143 +17	2720	2070 -19
560	160 +19	2760	2051 -22
600	179 +22	2800	2029 -26
640	201 +25	2840	2003 -29
680	226 +28	2880	1974 -31
720	254 +30	2920	1943 -35
760	284 +33	2960	1908 -37
800	317 +36	3000	1871 -40
840	353 +38	3040	1831 -43
880	391 +40	3080	1788 -45
920	431 +42	3120	1743 -47
960	473 +45	3160	1696 -49
1000	518 +46	3200	1647 -51
1040	564 +48	3240	1596 -53
1080	612 +50	3280	1543 -54
1120	662 +51	3320	1489 -55
1160	713 +53	3360	1431 -57
1200	766 +54	3400	1377 -57
1240	820 +54	3440	1320 -58
1280	874 +56	3480	1262 -59
1320	930 +57	3520	1203 -59
1360	987 +57	3560	1144 -60
1400	1044 +57	3600	1084 -59
1440	1101 +58	3640	1025 -58
1480	1159 +58	3680	967 -58
1520	1217 +57	3720	909 -58
1560	1274 +57	3760	851 -57
1600	1331 +56	3800	794 -55
1640	1387 +56	3840	739 -54
1680	1443 +55	3880	685 -52
1720	1498 +53	3920	633 -51
1760	1551 +52	3960	582 -49
1800	1603 +51	4000	533 -47
1840	1654 +48	4040	486 -45
1880	1702 +47	4080	441 -42
1920	1749 +44	4120	399 -40
1960	1793 +43	4160	359 -37
2000	1836 +39	4200	322 -35
2040	1875 +37	4240	287 -31
2080	1912 +35	4280	256 -29
2120	1947 +31	4320	227 -26
2160	1978 +29	4360	201 -23
2200	2007 +25	4400	178 -20

TABLE XVI.

Arg. X.	Equation.	Arg. X.	Equation.
d.		d.	
0	479 -56	5920	1182 +53
160	423 -54	6080	1235 +50
320	369 -50	6240	1285 +46
480	319 -47	6400	1331 +42
640	272 -42	6560	1373 +38
800	230 -38	6720	1411 +33
960	192 -33	6880	1444 +28
1120	159 -29	7040	1472 +23
1280	130 -23	7200	1495 +18
1440	107 -19	7360	1513 +12
1600	88 -12	7520	1525 +7
1760	76 -7	7680	1532 +1
1920	69 -2	7840	1533 +5
2080	67 +4	8000	1528 +10
2240	71 +10	8160	1518 +15
2400	81 +15	8320	1503 +21
2560	96 +20	8480	1482 +27
2720	116 +26	8640	1455 +31
2880	142 +31	8800	1424 +36
3040	173 +36	8960	1388 +40
3200	209 +40	9120	1348 +45
3360	249 +44	9280	1303 +48
3520	293 +48	9440	1255 +52
3680	341 +52	9600	1203 +55
3840	393 +55	9760	1148 +58
4000	448 +57	9920	1090 +60
4160	505 +60	10080	1030 +61
4320	565 +61	10240	969 +63
4480	626 +63	10400	906 +64
4640	689 +64	10560	842 +64
4800	753 +64	10720	778 +64
4960	817 +64	10880	714 +63
5120	881 +63	11040	651 +63
5280	944 +62	11200	588 +60
5440	1006 +61	11360	528 +58
5600	1067 +59	11520	470 +56
5760	1126 +56	11680	414 +53
5920	1182 +53	11840	361 +50

The quantities tabulated are in units of the fourth decimal of a day

Inequalities of the Fundamental Argument.

TABLE XVII.

Arg. XI.	Equation.	Arg. XI.	Equation.	Arg. XI.	Equation.
d.		d.		d.	
0	1143 ⁺²⁵	12160	1120 ⁻²²	24320	82 ⁺⁶
320	1168 ²⁴	12480	1098 ²²	24640	88 ¹⁰
640	1192 ²³	12800	1076 ²⁵	24960	98 ¹³
960	1215 ²²	13120	1051 ²⁵	25280	111 ¹⁵
1280	1237 ²⁰	13440	1026 ²⁶	25600	126 ¹⁹
1600	1257 ¹⁹	13760	1000 ²⁸	25920	145 ²¹
1920	1276 ¹⁸	14080	972 ²⁹	26240	166 ²³
2240	1294 ¹⁶	14400	943 ³¹	26560	189 ²⁶
2560	1310 ¹⁴	14720	912 ³¹	26880	215 ²⁷
2880	1324 ¹²	15040	881 ³³	27200	242 ³⁰
3200	1336 ¹¹	15360	848 ³⁵	27520	272 ³¹
3520	1347 ⁹	15680	813 ³⁵	27840	303 ³²
3840	1356 ⁸	16000	778 ³⁶	28160	335 ³⁴
4160	1364 ⁵	16320	742 ³⁸	28480	369 ³⁴
4480	1369 ⁴	16640	704 ³⁸	28800	403 ³⁵
4800	1373 ⁺²	16960	666 ³⁹	29120	438 ³⁶
5120	1375 ⁰	17280	627 ³⁹	29440	474 ³⁶
5440	1375 ⁻¹	17600	588 ³⁹	29760	510 ³⁶
5760	1374 ³	17920	549 ⁴⁰	30080	546 ³⁶
6080	1371 ⁴	18240	509 ³⁹	30400	582 ³⁶
6400	1367 ⁵	18560	470 ³⁹	30720	618 ³⁶
6720	1362 ⁷	18880	431 ³⁷	31040	654 ³⁶
7040	1355 ⁸	19200	394 ³⁷	31360	690 ³⁶
7360	1347 ⁹	19520	357 ³⁶	31680	725 ³⁵
7680	1338 ¹¹	19840	321 ³⁴	32000	760 ³⁵
8000	1327 ¹¹	20160	287 ³²	32320	795 ³⁴
8320	1316 ¹²	20480	255 ³⁰	32640	829 ³⁴
8640	1304 ¹³	20800	225 ²⁸	32960	863 ³²
8960	1291 ¹³	21120	197 ²⁵	33280	895 ³³
9280	1278 ¹⁵	21440	172 ²³	33600	928 ³¹
9600	1263 ¹⁵	21760	149 ¹⁹	33920	959 ³¹
9920	1248 ¹⁶	22080	130 ¹⁷	34240	990 ³⁰
10240	1232 ¹⁶	22400	113 ¹³	34560	1020 ³⁰
10560	1216 ¹⁸	22720	100 ¹¹	34880	1050 ²⁸
10880	1198 ¹⁸	23040	89 ⁷	35200	1078 ²⁸
11200	1180 ¹⁹	23360	82 ⁻³	35520	1106 ²⁷
11520	1161 ²⁰	23680	79 ⁰	35840	1133 ²⁶
11840	1141 ⁻²¹	24000	79 ⁺³	36160	1159 ⁺²⁴
12160	1120	24320	82 ⁺³	36480	1183 ⁺²⁴

TABLE XVIII.

Arg. XII.	Equation.	Arg. XII.	Equation.
d.		d.	
0	413 ⁺²⁹	1600	354 ⁻³¹
40	442 ³⁰	1640	323 ³¹
80	472 ²⁸	1680	292 ³¹
120	500 ²⁹	1720	261 ²⁹
160	529 ²⁷	1760	232 ²⁸
200	556 ²⁷	1800	204 ²⁷
240	583 ²⁵	1840	177 ²⁵
280	608 ²⁴	1880	152 ²³
320	632 ²³	1920	129 ²²
360	655 ²²	1960	107 ¹⁹
400	677 ¹⁹	2000	88 ¹⁷
440	696 ¹⁹	2040	71 ¹⁶
480	715 ¹⁶	2080	55 ¹²
520	731 ¹⁴	2120	43 ¹⁰
560	745 ¹²	2160	33 ⁸
600	757 ⁹	2200	25 ⁵
640	766 ⁸	2240	20 ⁻³
680	774 ⁵	2280	17 ⁰
720	779 ²	2320	17 ⁺²
760	781 ⁺¹	2360	19 ⁵
800	782 ⁻³	2400	24 ⁸
840	779 ⁵	2440	32 ⁹
880	774 ⁷	2480	41 ¹²
920	767 ¹⁰	2520	53 ¹⁴
960	757 ¹²	2560	67 ¹⁶
1000	745 ¹⁵	2600	83 ¹⁸
1040	730 ¹⁷	2640	101 ²⁰
1080	713 ¹⁹	2680	121 ²²
1120	694 ²¹	2720	143 ²²
1160	673 ²³	2760	165 ²⁵
1200	650 ²⁵	2800	190 ²⁷
1240	625 ²⁶	2840	215 ²⁷
1280	599 ²⁸	2880	242 ²⁷
1320	571 ²⁹	2920	269 ²⁹
1360	542 ³⁰	2960	298 ²⁹
1400	512 ³¹	3000	327 ²⁹
1440	481 ³¹	3040	356 ²⁹
1480	450 ³²	3080	385 ²⁹
1520	418 ³²	3120	414 ³⁰
1560	386 ⁻³²	3160	444 ⁺²⁹
1600	354	3200	473

The quantities tabulated are in units of the fourth decimal of a day.

Inequalities of the Fundamental Argument.

TABLE XIX.

TABLE XX.

TABLE XXI.

Arg. XIII.	Equation.	Arg. XIV.	Equation.	Arg. XV.	Equation.	Arg. XV.	Equation.
d.		d.		d.		d.	
0	557-11	0	91-18	0	104+9	1440	469-15
80	546-14	320	73-15	40	115+13	1480	454-17
160	532-17	640	58-9	80	128-15	1520	437-18
240	515-19	960	49-4	120	143-16	1560	419-19
320	496-22	1280	45+2	160	159-17	1600	400-19
400	474-24	1600	47-7	200	176-19	1640	381-20
480	450-26	1920	54-13	240	195-20	1680	361-21
560	424-27	2240	67-17	280	214-21	1720	340-21
640	397-29	2560	84-22	320	234-21	1760	319-21
720	368-29	2880	106-25	360	255-21	1800	298-21
800	339-30	3200	131-27	400	276-21	1840	277-21
880	309-30	3520	158-29	440	297-21	1880	256-20
960	279-30	3840	187-30	480	318-21	1920	236-20
1040	249-29	4160	217-29	520	339-21	1960	216-21
1120	220-28	4480	246-27	560	360-21	2000	197-18
1200	192-27	4800	273-24	600	381-20	2040	179-18
1280	165-25	5120	297-21	640	401-19	2080	161-16
1360	140-23	5440	318-17	680	420-18	2120	145-14
1440	117-21	5760	335-12	720	438-16	2160	131-14
1520	96-19	6080	347-7	760	454-16	2200	117-12
1600	77-16	6400	354+1	800	470-14	2240	105-10
1680	61-12	6720	355-5	840	484-12	2280	95-8
1760	49-10	7040	350-10	880	496-11	2320	87-7
1840	39-6	7360	340-15	920	507-8	2360	80-4
1920	33-3	7680	325-20	960	515-7	2400	76-3
2000	30+1	8000	305-23	1000	522-5	2440	73-1
2080	31+4	8320	282-27	1040	527-3	2480	72+1
2160	35-8	8640	255-28	1080	530+1	2520	73+3
2240	43-11	8960	227-29	1120	531-1	2560	76-4
2320	54-15	9280	198-30	1160	530-3	2600	80-7
2400	69-18	9600	168-28	1200	527-5	2640	87-9
2480	87-21	9920	140-26	1240	522-7	2680	96-10
2560	108-23	10240	114-23	1280	515-9	2720	106-12
2640	131-26	10560	91-19	1320	506-11	2760	118-13
2720	157-28	10880	72-14	1360	495-12	2800	131-15
2800	185-30	11200	58-9	1400	483-14	2840	146+16
2880	215-30	11520	49-9	1440	469-14	2880	162+16
2960	245-32						
3040	277-32						
3120	309-31						
3200	340-32						
3280	372-30						
3360	402-28						
3440	430-27						
3520	457-25						
3600	482-22						
3680	504-19						
3760	523-16						
3840	539-13						
3920	552-10						
4000	562-6						
4080	568+2						
4160	570+1						
4240	569-5						
4320	564-8						
4400	556-11						
4480	545-15						
4560	530-15						

The quantities tabulated are in units of the fourth decimal of a day.

Inequalities of the Fundamental Argument.

TABLE XXII.

Arg. XVI.	Equation.	Arg. XVI.
d. d.		d. d.
0—2	11	386—420
3—7	12	381—385
8—42	11	347—380
43—58	10	331—346
59—71	9	318—330
72—83	8	306—317
84—94	7	295—305
95—105	6	284—294
106—116	5	272—283
117—128	4	261—271
129—141	3	248—260
142—157	2	232—247
158—191	1	197—231
192—196	0	

TABLE XXIII.

Arg. XVII.	Equation.
d. d.	
0—1	1
2—50	0
51—65	1
66—77	2
78—89	3
90—101	4
102—116	5
117—165	6
166—180	5
181—192	4
193—203	3
204—216	2
217—231	1
232—281	0

The quantities tabulated are in units of the fourth decimal of a day.

Inequalities of the Fundamental Argument.

TABLE XXIV.

A.	d. o	d. 160	d. 320	d. 480	d. 640	d. 800	d. 960	d. 1120	d. 1280	d. 1440	d. 1600	d. 1760	d. 1920	d. 2080	d. 2240	d. 2400	d. 2560	d. 2720
0	350	338	343	363	395	432	464	481	472	429	354	269	203	177	199	258	337	416
1	328	322	336	364	402	440	470	478	453	394	310	229	178	175	218	290	373	450
2	308	310	332	368	410	449	473	469	428	354	267	195	165	185	245	326	409	480
3	290	302	333	375	421	458	473	454	397	312	227	172	164	205	278	364	443	506
4	277	298	338	386	433	466	469	433	360	271	195	159	174	234	315	401	474	527
5	269	300	347	400	446	471	460	407	322	233	171	158	195	267	353	435	500	542
6	266	307	361	417	460	473	445	375	283	202	159	168	223	305	390	466	521	551
7	269	319	380	436	472	471	424	341	248	179	158	188	257	343	425	493	535	552
8	278	338	402	456	481	463	398	306	217	166	167	216	294	380	456	513	543	547
9	294	361	427	476	486	448	368	272	194	164	186	250	332	414	482	527	545	535
10	317	390	455	493	486	429	336	242	180	172	213	286	369	445	501	534	539	518
11	346	421	482	506	479	404	304	219	176	189	244	323	402	469	514	533	526	496
12	380	456	507	513	465	375	275	203	181	213	279	359	431	458	520	526	508	469
13	418	490	528	513	445	344	250	196	195	242	314	391	455	500	519	513	485	440
14	459	523	543	506	419	314	231	198	216	274	348	419	473	504	511	493	458	409
15	500	551	550	490	389	287	221	207	242	307	379	441	483	502	496	469	428	378
16	540	573	547	466	358	265	217	224	271	339	405	457	487	493	476	441	396	348
17	574	585	535	437	328	249	222	246	302	368	426	467	484	479	452	411	365	321
18	601	587	514	404	301	240	234	271	331	393	442	470	476	459	424	380	335	297
19	619	579	484	371	280	239	251	298	358	412	450	467	461	435	395	349	308	277
20	625	558	449	339	265	246	272	324	381	427	454	458	442	408	365	321	285	264
21	618	529	411	311	258	258	296	349	400	436	451	445	419	379	335	295	267	256
22	598	492	374	290	258	275	320	371	414	440	444	427	394	351	308	274	254	255
23	567	450	340	276	265	295	343	390	424	439	432	406	368	325	285	258	248	259
24	528	407	312	270	278	317	365	405	430	433	416	384	342	300	266	247	248	270
25	482	367	292	272	295	339	384	417	431	424	398	360	318	279	252	244	255	286
26	435	332	280	281	316	361	401	424	428	411	378	337	296	263	244	246	268	306
27	388	306	277	296	338	381	414	428	422	396	358	315	278	252	243	255	286	330
28	348	289	283	315	361	400	424	429	412	379	338	296	264	247	248	269	308	356
29	316	281	296	338	383	416	431	426	401	362	320	281	255	247	258	289	333	383
30	293	283	315	361	404	429	435	420	387	346	304	270	252	254	274	312	360	409
31	282	295	338	385	423	440	436	412	373	330	291	263	254	265	294	338	387	433
32	282	314	363	409	439	447	433	401	359	316	281	261	261	282	318	365	414	455
33	291	337	390	431	452	451	427	390	345	305	274	263	273	302	343	392	439	472
34	309	365	416	451	462	451	419	377	332	295	273	270	288	324	370	418	460	485
35	334	394	441	467	469	448	409	364	321	289	274	281	307	348	396	442	478	493
36	363	423	463	480	471	441	397	351	311	286	279	295	327	373	420	463	491	496
37	394	449	482	488	469	431	384	329	304	286	287	311	349	396	442	479	498	491
38	425	474	496	491	463	419	370	327	398	288	298	329	371	418	461	491	501	488
39	454	494	505	490	452	404	355	317	294	293	312	347	392	438	476	498	499	477
40	480	509	509	483	438	388	341	307	293	299	325	365	411	454	487	501	493	464
41	501	519	507	471	421	370	327	300	294	308	340	383	428	467	493	499	483	447
42	517	523	499	455	402	352	313	294	296	317	354	398	442	477	495	493	470	429
43	527	519	485	434	380	333	301	289	300	327	368	412	453	482	493	484	455	410
44	529	509	466	411	357	315	290	286	305	338	380	424	461	484	488	472	438	390
45	525	493	442	385	334	298	280	285	310	348	391	433	466	483	480	459	420	372
46	513	471	415	358	311	282	273	285	317	357	401	440	468	479	470	444	403	354
47	495	445	385	331	289	267	267	287	323	366	408	444	468	473	459	429	387	338
48	470	414	354	304	268	255	263	290	330	373	415	447	466	465	447	415	371	324
49	441	381	323	277	250	245	261	294	336	380	420	448	462	457	435	401	357	312
50	408	347	292	253	234	238	261	299	343	386	423	448	457	448	424	387	345	303
51	373	313	264	232	222	234	263	305	350	392	426	447	451	439	413	376	335	297
52	337	280	237	214	212	232	267	311	357	398	428	445	446	431	403	366	327	294
53	301	250	214	199	207	234	273	319	364	403	430	443	440	423	393	357	322	293
54	267	222	195	189	205	238	281	328	372	408	432	440	434	415	385	351	318	295
55	237	199	180	183	206	244	290	337	379	412	432	438	429	408	378	346	318	300
56	210	180	170	181	211	253	300	346	386	416	433	435	424	401	372	342	319	307
57	187	165	165	184	220	264	311	356	394	420	433	432	419	395	367	341	323	317
58	170	156	164	190	230	276	322	365	400	423	432	429	413	389	363	341	328	330
59	158	152	168	200	243	289	334	375	406	425	431	425	408	384	360	342	336	341
60	150	153	176	213	257	303	346	383	411	426	429	420	402	379	359	346	345	361

The horizontal argument of this table is Arg. I.

Inequalities of the Fundamental Argument.

TABLE XXIV—Continued.

d. 2880	d. 3040	d. 3200	d. 3360	d. 3520	d. 3680	d. 3840	d. 4000	d. 4160	d. 4320	d. 4480	d. 4640	d. 4800	d. 4960	d. 5120	d. 5280	d. 5440	d. 5600	A.
485	533	555	551	524	480	427	372	323	286	264	261	278	312	357	405	448	477	0
511	548	558	541	505	456	401	349	306	277	265	273	298	337	384	429	465	487	1
531	556	554	527	483	430	376	328	293	274	272	289	321	364	409	450	479	492	2
546	558	544	508	459	404	353	311	285	276	284	309	346	390	432	466	487	491	3
555	554	529	486	433	379	332	299	283	284	301	332	371	414	451	478	491	487	4
557	545	509	460	406	356	316	292	286	296	320	356	396	435	465	485	489	478	5
552	529	486	434	381	335	305	290	293	312	342	379	418	451	475	486	483	465	6
542	508	460	407	357	319	297	293	305	331	364	401	436	463	479	482	471	450	7
525	484	432	380	336	306	295	301	320	351	386	420	450	470	478	473	457	433	8
504	457	404	355	318	299	297	312	338	371	406	436	459	471	471	460	440	415	9
479	428	377	333	305	296	304	327	357	391	422	447	463	467	460	444	421	396	10
450	399	351	315	297	298	315	344	376	408	435	453	461	458	445	425	402	378	11
420	370	328	301	293	304	329	361	394	422	443	454	455	445	427	406	383	361	12
390	343	309	292	295	315	345	379	410	433	447	450	444	428	408	386	365	345	13
361	320	294	288	301	328	362	396	422	439	446	442	429	409	388	367	348	332	14
333	300	285	289	311	344	379	410	431	441	440	429	412	390	369	350	334	323	15
309	285	281	295	325	360	395	422	436	438	430	414	393	370	351	335	323	316	16
289	275	282	305	341	378	409	430	436	431	416	396	373	352	335	322	314	312	17
274	271	288	319	358	394	421	434	433	420	399	376	354	335	322	313	309	312	18
265	273	299	336	376	409	429	434	425	406	381	357	336	321	311	306	308	316	19
262	280	314	355	394	421	433	430	414	390	363	339	321	309	304	304	309	322	20
265	293	332	375	410	430	434	422	400	372	344	322	308	301	299	304	314	332	21
274	309	352	394	423	436	430	412	384	354	327	308	298	295	298	307	321	343	22
288	329	373	411	434	437	424	398	367	336	311	296	291	292	299	312	331	356	23
307	351	395	427	441	435	414	382	349	319	298	287	286	292	303	320	342	370	24
329	375	414	439	444	430	401	366	331	303	287	281	284	295	309	330	355	385	25
353	398	432	448	443	420	386	348	314	290	279	278	285	299	317	341	369	400	26
378	420	447	453	438	408	370	331	299	279	273	277	288	305	327	354	383	414	27
403	440	457	453	430	393	352	314	286	271	270	278	292	313	338	367	397	426	28
427	456	463	450	418	377	334	298	274	265	268	280	298	322	350	380	410	436	29
447	468	465	442	404	359	317	284	265	261	268	284	305	332	362	393	422	443	30
464	475	462	431	387	341	300	271	258	259	270	289	314	343	375	406	432	447	31
477	477	455	416	369	322	284	261	252	258	273	296	323	355	387	417	439	448	32
485	475	444	399	350	304	270	252	248	258	277	304	334	367	399	426	443	445	33
488	468	429	380	330	287	258	245	246	261	283	313	346	379	410	434	444	438	34
486	457	412	361	311	271	247	240	246	264	290	323	358	391	420	439	442	426	35
480	443	393	340	292	257	238	236	247	270	299	334	370	403	429	441	436	412	36
468	426	373	320	275	245	231	234	250	277	310	347	384	414	436	441	427	394	37
454	407	352	300	260	235	227	235	255	286	322	361	398	425	441	438	415	375	38
437	386	331	281	246	227	225	237	263	298	337	376	411	434	443	432	400	355	39
418	365	311	265	235	222	225	243	273	312	353	392	424	442	442	422	383	335	40
398	344	292	251	226	219	228	251	287	328	371	408	436	447	439	410	365	317	41
377	323	275	239	220	219	234	263	303	347	390	425	447	450	432	396	347	301	42
357	305	261	230	217	222	244	278	322	367	409	440	455	450	423	380	330	289	43
338	288	249	224	218	229	257	297	343	389	429	454	461	446	411	363	315	281	44
320	274	240	222	222	240	274	318	367	412	448	466	464	440	398	347	303	279	45
305	263	235	223	230	255	295	343	392	435	465	475	463	430	383	332	294	283	46
292	255	233	228	242	274	319	369	418	457	480	481	459	418	367	319	291	294	47
281	250	234	237	258	296	345	397	443	477	492	482	451	404	352	309	292	310	48
274	249	240	250	279	322	374	425	468	494	499	479	439	388	337	303	300	333	49
270	251	250	267	303	351	404	453	490	508	501	472	425	371	325	302	314	360	50
269	257	263	288	330	382	434	479	509	516	499	460	408	355	316	306	333	390	51
271	267	280	312	359	413	463	502	523	520	491	445	390	340	311	316	358	423	52
277	279	300	339	390	443	490	521	532	517	478	426	371	327	311	332	387	454	53
286	296	324	369	421	472	513	535	535	508	461	406	352	318	317	354	419	484	54
298	315	351	399	452	499	532	544	530	494	440	384	336	314	329	381	451	508	55
313	337	378	429	480	521	545	546	520	474	417	362	322	315	348	411	482	528	56
330	361	407	458	505	539	552	541	504	450	392	341	313	323	372	444	510	541	57
350	387	435	484	525	550	552	529	482	424	366	324	310	338	401	477	532	546	58
371	413	462	508	541	556	546	510	456	396	342	311	314	359	434	507	549	544	59
394	439	486	526	551	555	532	487	427	367	322	303	325	387	468	534	558	535	60

The quantities tabulated are in units of the fourth decimal of a day.

TABLES OF
Inequalities of the Fundamental Argument.

TABLE XXIV—Continued.

A.	d. 5600	d. 5760	d. 5920	d. 6080	d. 6240	d. 6400	d. 6560	d. 6720	d. 6880	d. 7040	d. 7200	d. 7360	d. 7520	d. 7680	d. 7840	d. 8000	d. 8160	d. 8320
0	477	489	481	459	429	398	374	363	369	389	420	458	496	527	539	524	475	390
1	487	490	475	449	418	390	370	365	376	400	434	471	506	530	531	502	439	343
2	492	487	466	437	407	382	367	368	384	411	446	482	513	528	517	474	398	296
3	491	479	455	425	406	374	364	371	391	421	456	491	515	520	496	441	355	251
4	487	469	441	411	385	367	363	375	399	430	465	496	513	507	471	404	311	212
5	478	456	427	398	374	362	363	379	406	439	472	499	507	490	441	365	269	180
6	465	440	411	384	365	357	364	385	414	447	478	498	497	467	408	325	232	159
7	450	423	395	371	356	354	366	390	421	454	482	494	482	442	374	287	201	150
8	433	406	379	359	349	353	370	397	428	459	481	486	464	414	338	253	181	154
9	415	388	365	349	344	353	374	404	436	464	480	475	442	383	305	225	171	172
10	396	371	352	341	341	356	380	412	442	467	475	460	418	353	274	205	173	201
11	378	356	341	335	341	360	388	420	449	468	468	442	392	324	249	195	187	240
12	361	342	332	332	344	367	397	428	454	466	457	422	366	297	231	196	212	286
13	345	331	327	332	349	375	406	437	458	462	443	401	341	275	221	207	247	336
14	332	323	324	335	356	385	417	444	460	455	428	379	318	258	221	228	289	385
15	323	319	325	341	366	397	427	450	459	445	410	357	298	248	230	259	335	433
16	316	317	328	349	377	409	437	455	455	433	391	337	282	246	248	295	381	474
17	312	319	335	360	390	421	446	457	448	418	372	318	272	252	273	336	425	509
18	312	324	345	373	403	433	452	455	437	401	353	304	269	265	305	378	465	533
19	316	333	357	387	417	443	456	450	424	383	335	293	272	286	340	418	497	549
20	322	343	371	402	431	451	457	442	409	365	320	288	281	311	377	454	520	555
21	332	356	386	416	442	457	453	430	392	348	309	288	297	341	412	483	534	551
22	343	370	401	430	451	458	445	415	374	332	302	294	318	373	444	505	540	539
23	356	385	416	442	457	455	433	397	356	319	299	305	343	404	470	519	536	521
24	370	401	430	451	458	447	418	378	339	310	302	322	369	432	489	523	524	496
25	385	415	441	456	455	435	400	359	324	305	309	341	395	455	501	519	505	467
26	400	428	450	458	447	419	380	341	313	305	322	363	420	472	504	507	481	436
27	414	439	455	454	435	399	359	324	305	309	338	386	441	483	500	490	454	405
28	426	447	456	446	418	378	338	310	302	318	356	407	457	487	490	467	424	374
29	436	452	452	433	398	356	320	301	304	331	376	427	467	484	473	441	393	345
30	443	453	444	416	376	334	305	296	311	348	396	442	472	476	453	413	364	320
31	447	449	431	396	353	314	294	297	323	366	414	453	471	462	429	384	337	300
32	448	441	414	373	330	298	288	302	338	385	429	459	464	444	403	357	314	286
33	445	428	394	349	309	286	288	313	356	403	441	459	452	423	478	332	395	278
34	438	412	371	326	292	279	293	328	375	419	448	455	437	400	353	311	282	276
35	426	393	348	305	279	278	304	347	394	433	452	447	420	378	331	294	275	279
36	412	372	326	288	272	284	320	367	413	443	451	435	400	355	312	283	274	289
37	394	350	305	275	271	296	339	388	428	449	446	421	380	335	297	276	278	302
38	375	328	288	268	277	313	362	409	441	450	437	404	360	318	287	275	288	320
39	355	308	275	267	290	334	385	427	450	448	425	386	342	304	281	280	301	340
40	335	292	267	273	308	359	408	443	454	442	411	368	326	293	281	288	318	361
41	317	279	267	286	331	385	429	454	454	432	395	351	312	287	284	301	336	383
42	301	272	273	306	357	410	447	460	450	420	379	335	301	286	291	316	356	405
43	289	271	285	330	386	434	461	463	442	406	362	322	295	288	302	332	376	425
44	281	277	305	358	414	454	469	460	431	390	347	311	291	293	314	350	396	444
45	279	289	330	388	440	470	473	454	417	374	332	303	291	302	328	368	414	459
46	283	307	359	418	462	480	472	443	401	357	320	298	295	312	344	385	430	471
47	294	332	390	446	480	485	465	429	384	342	310	296	301	324	359	401	443	481
48	310	360	421	470	492	484	455	413	367	328	303	297	309	337	374	415	454	487
49	333	392	451	490	497	478	440	395	350	317	299	300	319	350	388	427	463	490
50	360	424	478	503	497	466	423	376	335	307	298	307	331	363	400	437	469	491
51	390	455	499	509	490	451	404	358	321	301	300	315	342	376	411	446	473	490
52	423	482	514	509	478	433	384	340	310	299	305	325	354	387	421	452	474	486
53	454	505	521	502	462	412	364	325	303	299	312	335	366	398	429	456	474	482
54	484	522	522	490	443	391	346	313	299	303	321	347	377	408	436	459	473	476
55	508	531	515	473	421	370	329	305	299	309	332	359	389	417	442	461	470	469
56	528	533	503	453	398	350	316	300	302	318	343	372	399	425	446	461	467	460
57	541	529	486	431	376	333	306	299	309	329	356	384	410	432	449	460	462	451
58	546	518	465	407	355	319	301	303	318	342	369	396	419	438	452	459	456	441
59	544	501	442	384	338	309	301	310	331	356	382	407	428	443	453	456	448	429
60	535	481	418	363	323	304	305	321	345	371	396	418	435	447	454	452	440	417

The horizontal argument of this table is Arg. I.

Inequalities of the Fundamental Argument.

TABLE XXIV—Continued.

d. 8480	d. 8640	d. 8800	d. 8960	d. 9120	d. 9280	d. 9440	d. 9600	d. 9760	d. 9920	d. 10080	d. 10240	d. 10400	d. 10560	d. 10720	d. 10880	d. 11040	A.
282	181	126	149	244	374	489	562	589	576	532	471	406	349	308	284	282	0
235	150	126	181	295	424	524	578	587	560	507	444	382	331	297	282	287	1
195	131	140	223	348	469	551	586	579	540	481	418	360	317	291	284	296	2
163	127	168	272	400	507	570	587	565	518	456	394	342	306	289	289	308	3
142	138	207	325	448	539	582	581	548	494	431	372	327	300	290	298	322	4
136	162	255	379	491	562	586	571	528	469	407	355	317	298	296	310	338	5
143	198	307	430	526	577	584	556	505	445	386	340	311	299	304	324	354	6
163	244	361	475	553	586	576	538	481	422	369	330	308	304	316	339	370	7
196	295	414	514	572	585	563	516	457	400	354	323	309	312	329	354	384	8
239	349	462	545	583	580	546	493	434	382	343	320	313	322	342	369	397	9
288	402	504	566	586	568	526	469	412	367	336	320	320	334	356	382	407	10
340	451	537	580	582	552	502	445	393	355	331	323	329	346	370	394	415	11
392	494	561	585	572	532	478	422	376	345	330	329	340	359	382	403	419	12
441	528	576	582	556	509	454	401	363	340	331	336	351	371	391	409	421	13
484	553	582	572	536	484	429	383	352	337	335	345	362	381	399	411	419	14
519	569	579	556	512	458	406	367	345	337	341	355	373	390	403	412	415	15
544	576	570	535	485	431	386	355	341	339	349	366	382	396	404	409	408	16
560	573	553	510	457	406	368	346	339	344	358	375	390	400	403	403	398	17
567	563	531	482	429	384	354	340	341	351	368	384	396	401	399	395	387	18
564	545	505	452	402	364	343	338	345	360	378	392	399	399	394	386	375	19
553	522	475	423	377	348	336	339	352	370	387	397	399	396	386	375	363	20
535	495	444	394	356	336	334	344	361	380	395	401	398	390	377	364	351	21
511	464	413	368	339	329	335	351	371	390	402	403	395	383	367	353	340	22
482	432	383	346	327	326	340	361	383	400	408	403	391	375	358	342	330	23
452	400	356	328	319	328	348	373	395	409	411	402	386	367	348	332	322	24
419	371	333	315	317	334	360	387	407	417	413	400	381	359	339	324	315	25
387	344	315	308	320	344	374	402	419	423	414	397	374	351	331	317	310	26
357	321	303	307	327	358	389	416	429	428	414	392	367	343	324	312	307	27
331	304	297	311	340	374	406	430	438	431	412	387	361	336	319	309	306	28
309	292	297	321	356	393	424	442	445	432	410	382	354	331	315	307	306	29
293	287	303	334	374	412	441	454	450	433	406	377	348	326	311	305	307	30
283	288	314	352	395	432	456	463	454	432	402	371	343	321	309	305	308	31
280	296	330	373	416	450	470	470	455	429	397	365	338	318	308	306	311	32
283	309	350	396	438	468	481	475	455	425	392	359	332	314	306	306	314	33
291	326	372	419	459	484	490	478	453	420	385	352	327	311	305	307	318	34
305	346	396	442	478	496	496	479	450	414	378	345	322	308	304	309	322	35
322	369	420	464	495	506	499	476	444	406	369	338	317	305	303	310	326	36
343	394	443	484	508	512	499	472	436	397	360	330	311	302	302	313	331	37
366	418	466	501	518	515	496	465	427	386	350	322	305	298	301	315	337	38
390	441	485	514	524	515	491	456	416	375	339	313	299	295	302	319	343	39
413	462	501	524	527	512	483	445	403	362	328	305	293	293	304	324	350	40
435	481	514	530	526	506	473	432	388	348	316	296	288	292	307	330	358	41
455	496	523	531	522	497	460	416	372	333	304	287	284	293	312	338	366	42
472	508	528	529	514	485	444	399	356	319	293	280	282	296	319	346	375	43
486	516	529	524	504	471	427	381	338	304	282	275	282	301	328	357	384	44
496	519	526	516	491	454	408	362	321	291	274	273	285	309	338	368	394	45
503	520	521	506	477	436	389	343	305	279	268	273	291	319	351	380	404	46
507	517	513	493	460	416	368	324	290	270	265	277	301	332	365	393	413	47
507	512	503	478	441	395	348	307	278	264	266	285	314	348	380	405	421	48
505	504	490	461	421	374	329	292	268	261	271	296	330	365	396	418	428	49
500	495	476	443	400	354	311	279	262	263	281	312	348	383	411	428	434	50
494	484	460	424	380	334	295	269	260	270	295	331	368	402	425	437	437	51
486	472	444	404	359	316	282	264	264	281	313	352	390	420	438	445	439	52
477	458	426	385	341	300	274	263	271	297	334	375	411	436	449	449	438	53
466	443	408	366	323	288	269	267	284	317	358	399	431	451	456	451	435	54
455	428	390	347	309	280	269	276	301	340	384	422	449	462	461	449	430	55
442	412	372	331	297	275	273	290	322	366	409	443	464	469	461	445	424	56
429	395	355	317	289	276	283	309	347	393	434	462	475	472	458	438	416	57
414	379	340	306	286	281	298	331	374	419	456	476	481	471	452	428	407	58
399	363	327	299	286	291	317	356	402	445	474	486	482	465	441	417	398	59
384	349	316	295	291	306	339	383	429	467	488	491	478	455	428	404	390	60

The quantities tabulated are in units of the fourth decimal of a day.

Inequalities of the Fundamental Argument.

TABLE XXIV—Continued.

A.	d. o	d. 160	d. 320	d. 480	d. 640	d. 800	d. 960	d. 1120	d. 1280	d. 1440	d. 1600	d. 1760	d. 1920	d. 2080	d. 2240	d. 2400	d. 2560	d. 2720
60	150	153	176	213	257	303	346	383	411	426	429	420	402	379	359	346	345	361
61	149	159	187	228	272	316	357	391	414	426	425	415	396	375	359	351	357	379
62	151	169	202	244	287	329	367	397	416	424	421	409	390	372	359	357	370	399
63	159	182	218	260	303	342	376	401	416	421	415	402	385	369	361	365	385	419
64	171	199	236	277	317	353	383	404	415	417	409	395	379	367	365	375	401	438
65	186	217	254	294	330	362	388	404	412	411	401	388	375	367	371	387	417	457
66	203	237	273	309	341	369	390	403	407	403	393	381	371	368	378	400	434	474
67	222	256	290	322	351	374	391	400	401	395	385	375	369	371	387	414	451	488
68	242	275	305	334	358	376	389	395	394	387	378	370	369	376	398	429	466	500
69	262	292	319	343	362	377	385	389	386	379	371	367	370	384	410	444	480	509
70	282	308	330	350	365	375	381	382	378	371	366	366	374	393	423	459	492	514
71	300	322	340	355	365	372	375	374	370	365	363	367	381	405	438	473	501	516
72	316	334	347	357	364	368	369	367	363	361	362	371	390	418	452	486	508	514
73	331	343	352	358	361	363	363	361	359	358	364	378	401	433	467	496	511	508
74	343	350	355	358	358	359	358	356	356	359	369	388	415	449	481	504	511	498
75	353	356	357	356	355	355	354	353	356	362	377	400	431	464	493	510	508	486
76	361	360	357	355	353	352	351	353	358	369	388	415	448	479	503	512	501	469
77	368	362	357	353	351	350	351	355	364	378	402	432	465	494	510	510	491	449
78	373	364	357	353	351	351	354	360	373	391	418	450	482	506	515	506	476	427
79	377	366	358	354	352	354	359	368	384	407	436	468	498	516	517	498	459	402
80	380	368	360	357	356	360	367	379	399	425	455	486	512	522	515	486	438	375
81	383	370	363	361	362	367	378	393	416	444	475	504	523	526	509	471	415	348
82	386	375	368	367	370	378	391	409	434	464	495	519	532	525	499	452	390	321
83	391	380	375	375	380	390	406	427	454	485	513	532	537	521	486	430	363	296
84	396	386	383	385	392	404	422	447	475	505	529	542	538	513	468	405	336	273
85	402	394	392	396	405	420	441	467	495	523	543	548	534	506	447	379	310	254
86	409	402	403	408	419	437	460	487	515	539	553	549	527	483	424	353	286	239
87	417	412	414	421	435	454	479	506	533	552	559	547	515	463	398	326	265	229
88	425	422	425	434	450	472	497	524	548	562	561	540	499	440	371	301	248	225
89	434	432	437	448	466	489	515	540	560	568	558	528	480	415	344	279	236	228
90	441	441	448	461	481	505	531	554	569	569	551	513	457	388	319	261	230	239
91	448	450	459	474	495	520	545	565	574	566	540	494	432	361	296	248	231	256
92	454	457	468	486	509	533	557	572	575	559	525	472	406	336	277	240	238	281
93	458	464	478	497	521	545	565	576	571	548	506	448	380	314	263	240	253	314
94	462	470	486	508	532	555	571	576	564	533	485	423	356	296	255	246	276	351
95	464	475	494	517	541	561	574	572	553	515	462	398	334	282	254	259	306	394
96	465	480	501	524	548	566	573	564	539	496	439	376	317	274	259	279	340	437
97	466	483	507	531	553	567	569	554	523	475	416	355	304	273	271	306	380	479
98	466	487	512	536	556	566	562	541	504	453	395	339	297	278	290	339	422	516
99	467	491	517	540	557	562	553	526	485	432	377	328	296	290	315	376	462	546
100	468	495	521	542	556	556	541	510	466	413	363	322	301	308	345	415	499	564
101	470	498	524	543	553	547	527	492	447	397	353	322	312	331	379	453	528	571
102	473	502	526	543	547	537	513	475	430	385	348	327	329	359	416	488	548	564
103	476	505	528	540	540	525	497	459	415	376	349	338	350	390	451	516	556	545
104	480	508	528	536	531	512	482	444	404	372	354	354	376	423	483	536	552	514
105	485	510	527	530	520	498	467	430	396	372	364	373	403	454	509	544	535	474
106	490	512	524	523	509	484	453	420	393	378	378	396	432	482	527	540	505	429
107	494	512	519	513	496	470	440	413	393	386	395	420	460	505	533	523	467	381
108	497	511	513	502	482	456	430	409	397	398	415	445	484	519	528	494	422	336
109	498	507	505	490	468	444	422	408	404	413	435	468	503	523	511	456	375	296
110	498	501	494	476	455	433	417	410	413	429	455	487	513	516	482	412	329	264
111	495	493	481	462	441	424	414	415	425	446	474	501	515	497	444	365	288	242
112	490	482	467	447	428	417	414	422	438	462	489	508	506	468	399	319	255	231
113	481	469	451	431	417	412	416	430	451	477	499	506	486	430	352	277	232	230
114	470	453	434	417	407	409	420	439	464	488	503	495	455	385	306	243	220	239
115	455	435	417	403	400	408	426	449	474	495	499	474	417	337	264	219	218	257
116	438	416	399	390	394	410	433	459	483	496	486	443	372	291	229	206	227	282
117	418	396	382	380	391	413	441	468	488	491	464	405	325	249	204	204	245	313
118	396	376	367	372	390	418	449	475	489	478	434	361	279	214	191	213	271	346
119	373	356	354	366	392	424	457	480	484	457	397	315	237	190	189	232	302	381
120	350	338	343	363	395	432	464	481	472	429	354	269	203	177	199	258	337	416

The horizontal argument of this table is Arg. I.

Inequalities of the Fundamental Argument.

TABLE XXIV—Continued.

d. 2880	d. 3040	d. 3200	d. 3360	d. 3520	d. 3680	d. 3840	d. 4000	d. 4160	d. 4320	d. 4480	d. 4640	d. 4800	d. 4960	d. 5120	d. 5280	d. 5440	d. 5600	A.
394	439	486	526	551	555	532	487	427	367	322	303	325	387	468	534	558	535	60
417	463	507	540	555	546	512	459	396	340	305	303	344	420	502	555	559	520	61
440	485	523	548	552	531	486	427	365	316	294	311	371	457	534	569	554	501	62
461	503	535	551	542	510	457	394	335	297	291	328	405	495	561	576	541	478	63
480	518	542	546	526	483	424	361	309	284	297	354	443	531	581	575	524	454	64
496	527	542	536	504	453	389	330	288	278	311	388	485	564	593	566	502	429	65
509	533	538	520	478	419	355	302	273	282	336	428	526	591	597	551	478	406	66
518	533	528	498	447	384	324	279	265	295	370	473	565	610	593	531	453	385	67
523	529	512	472	414	350	295	263	267	319	411	519	599	620	581	507	428	367	68
524	520	492	442	380	318	271	254	279	352	459	564	625	621	562	481	405	352	69
521	505	468	410	346	289	254	255	301	394	509	604	641	612	538	454	384	342	70
513	487	440	377	314	265	245	265	334	443	559	637	647	595	511	428	367	336	71
501	465	410	345	286	247	244	286	376	496	604	660	643	571	482	403	352	333	72
485	440	379	314	262	237	252	317	426	550	644	671	628	542	451	381	342	335	73
466	412	348	286	244	235	271	358	581	601	673	670	604	509	422	361	335	339	74
443	383	318	263	233	242	300	407	537	645	690	658	574	475	394	346	332	346	75
418	353	290	244	229	258	339	461	592	679	693	635	537	440	369	333	332	355	76
391	324	267	232	233	284	386	519	640	701	684	603	498	407	348	325	334	365	77
363	297	247	226	247	320	439	575	679	709	661	563	458	375	330	320	339	375	78
335	273	233	228	269	364	496	626	705	703	628	520	418	348	315	318	346	385	79
308	253	225	238	301	414	553	669	717	683	586	474	380	323	305	319	354	395	80
283	237	224	257	341	470	606	699	713	648	539	428	346	303	299	323	362	404	81
262	227	231	284	388	526	651	716	695	605	488	384	316	288	297	329	371	412	82
241	223	245	319	440	579	684	715	662	554	438	343	290	278	297	336	380	420	83
232	226	267	361	494	625	704	700	618	499	386	307	271	272	301	345	389	426	84
224	236	298	409	546	662	709	670	566	444	340	277	257	271	309	355	399	432	85
224	254	335	460	594	686	697	626	509	389	300	254	249	274	318	367	409	437	86
230	279	379	511	633	694	670	574	450	339	266	237	247	282	330	379	418	442	87
214	313	427	559	660	687	629	516	392	294	240	227	250	293	344	392	428	446	88
265	352	476	600	674	664	578	455	339	257	221	225	259	307	360	405	437	448	89
294	396	523	630	672	628	521	396	292	228	211	229	272	325	377	419	445	449	90
330	443	505	648	654	580	461	341	253	209	208	239	289	344	394	432	451	449	91
370	489	508	651	622	525	401	292	224	199	214	254	309	365	413	445	457	446	92
415	531	620	640	579	466	345	253	204	198	226	275	332	387	430	456	460	442	93
460	567	628	614	528	407	296	223	193	205	244	299	357	409	447	465	460	435	94
503	592	622	576	472	352	257	203	193	219	268	326	383	431	462	471	458	427	95
540	605	602	529	415	304	227	194	202	240	295	355	409	451	474	474	453	416	96
568	605	569	476	361	264	208	195	218	266	325	384	434	469	482	473	444	403	97
584	590	527	422	313	234	199	204	241	296	356	413	457	483	487	468	432	388	98
588	563	478	369	273	216	201	222	269	328	388	440	476	493	487	459	418	371	99
577	525	427	322	244	208	212	247	302	362	419	464	492	498	482	447	400	354	100
555	480	377	283	225	210	231	277	336	396	447	485	502	498	472	430	381	336	101
520	431	331	254	218	222	256	310	372	428	472	501	508	492	458	411	360	319	102
478	382	293	235	221	242	287	346	406	457	493	511	507	481	439	388	339	303	103
431	336	263	227	232	268	322	382	438	482	509	516	500	465	417	365	318	289	104
383	297	244	230	252	299	358	416	467	502	518	514	488	445	393	340	299	278	105
338	267	235	241	279	333	394	449	491	516	521	506	470	421	367	317	282	270	106
299	247	237	261	310	369	429	477	510	524	518	492	448	395	340	295	268	267	107
268	238	248	287	344	405	460	501	523	526	509	473	423	367	315	275	259	268	108
247	239	267	318	379	439	487	518	530	522	494	450	395	339	292	260	254	273	109
237	249	292	351	414	469	509	530	530	511	474	423	367	313	272	250	255	283	110
237	268	322	386	447	496	526	535	524	495	450	395	338	290	256	245	260	297	111
246	293	355	421	477	517	537	534	513	474	423	367	312	270	246	246	271	314	112
264	322	389	454	503	533	541	527	496	450	395	339	289	255	241	253	287	334	113
289	355	424	483	524	543	538	514	474	423	366	313	270	246	243	265	306	357	114
319	390	457	509	538	546	530	497	450	395	340	291	257	243	251	282	328	380	115
352	425	486	529	547	543	517	475	423	367	316	274	249	245	264	303	352	403	116
387	457	512	544	550	534	499	451	396	342	295	262	247	254	283	327	378	425	117
422	487	532	552	547	520	477	425	369	319	279	255	252	269	305	353	403	446	118
454	512	547	554	538	502	453	398	345	300	269	255	262	289	331	380	426	463	119
485	533	555	551	524	480	427	372	323	286	264	261	278	312	357	405	448	477	120

The quantities tabulated are in units of the fourth decimal of a day.

Inequalities of the Fundamental Argument.

TABLE XXIV—Continued.

A.	d. 5600	d. 5760	d. 5920	d. 6080	d. 6240	d. 6400	d. 6560	d. 6720	d. 6880	d. 7040	d. 7200	d. 7360	d. 7520	d. 7680	d. 7840	d. 8000	d. 8160	d. 8320
60	535	481	418	363	323	304	305	321	345	371	396	418	435	447	454	452	440	417
61	520	458	395	345	313	303	313	334	360	385	409	427	441	450	452	446	430	404
62	501	434	373	331	308	308	325	350	376	400	421	436	446	451	450	439	418	389
63	478	410	355	320	308	317	339	366	393	415	431	442	449	450	445	430	406	375
64	454	387	339	315	313	330	356	384	409	428	441	447	450	447	438	418	392	361
65	429	368	329	314	322	346	374	402	424	439	448	450	450	442	429	406	377	348
66	406	352	323	319	335	363	393	418	437	448	453	451	446	435	418	392	364	337
67	385	340	321	327	351	382	411	434	448	455	455	449	440	426	405	377	350	328
68	367	332	325	339	369	400	428	447	457	459	454	445	432	413	390	362	338	322
69	352	329	332	354	387	418	443	457	462	459	451	438	421	399	374	348	329	320
70	342	330	343	371	405	435	455	465	465	457	444	427	407	383	358	336	322	321
71	336	335	356	389	422	449	464	469	464	451	435	414	392	367	344	326	320	327
72	333	343	371	406	438	461	471	470	459	443	423	399	375	351	331	320	321	336
73	335	353	386	421	451	469	474	467	452	431	408	382	358	336	321	317	326	349
74	339	365	401	435	461	474	473	461	441	417	391	365	342	323	314	318	336	366
75	346	378	415	447	468	476	469	452	427	401	373	348	327	314	312	324	349	385
76	355	391	427	457	473	474	461	439	412	383	355	331	315	308	314	334	366	407
77	365	403	438	463	473	468	450	424	395	365	337	317	306	307	321	349	386	429
78	375	414	446	466	471	460	437	408	376	346	321	306	302	311	333	367	408	450
79	385	423	452	467	466	449	422	390	358	329	308	299	302	319	349	388	431	470
80	395	431	456	466	458	436	405	372	339	313	298	296	308	333	368	411	453	488
81	404	437	458	461	448	421	388	353	323	301	292	299	318	350	390	435	474	502
82	412	442	458	455	435	405	370	336	308	292	291	306	333	371	414	458	492	512
83	420	446	455	446	422	389	353	320	297	288	296	318	352	395	439	480	507	516
84	426	448	452	437	408	372	337	307	290	288	305	335	374	420	463	498	517	516
85	432	448	446	426	393	357	323	297	287	294	320	356	399	445	486	513	521	509
86	437	448	439	414	379	342	311	291	289	305	337	379	425	469	505	523	520	497
87	442	446	431	402	365	329	302	289	296	320	359	404	450	491	520	527	513	480
88	446	443	422	389	352	319	296	291	306	339	382	430	474	510	529	525	501	458
89	448	439	413	377	340	310	294	298	321	360	407	454	496	523	532	517	483	433
90	449	433	402	365	329	304	295	308	340	383	432	477	513	531	529	503	461	405
91	449	427	392	354	321	301	301	322	360	408	456	498	526	533	519	485	436	376
92	446	419	381	343	314	302	310	339	382	431	478	514	532	529	505	462	408	347
93	442	409	370	333	309	304	322	358	405	453	496	525	533	519	485	436	378	318
94	435	399	358	325	307	310	336	377	427	474	511	530	527	503	461	407	349	293
95	427	387	347	317	307	319	352	397	447	491	520	529	516	482	434	378	321	271
96	416	374	336	312	309	330	369	417	465	503	524	523	499	458	405	349	296	253
97	403	360	326	308	314	342	386	435	480	512	523	511	478	431	376	322	275	240
98	388	346	316	306	321	356	403	451	491	515	516	495	454	403	348	298	258	234
99	371	332	308	307	330	370	419	465	499	513	503	473	427	375	322	278	247	233
100	354	319	302	310	340	385	433	475	502	506	487	449	400	348	299	263	241	239
101	336	306	298	315	352	399	446	483	501	495	467	423	374	324	281	254	243	251
102	319	296	297	322	364	412	456	486	495	480	445	398	349	303	268	250	250	268
103	303	288	299	331	377	425	464	487	486	463	422	374	327	287	261	253	263	290
104	289	283	303	341	389	436	470	483	474	443	399	352	309	277	260	262	281	317
105	278	281	309	353	402	445	472	477	459	423	377	333	295	272	265	277	304	347
106	270	284	319	366	414	453	473	469	443	403	358	317	287	273	276	297	331	379
107	267	290	331	380	426	459	470	458	426	385	341	306	284	279	292	320	361	412
108	268	299	345	395	437	463	465	446	410	368	328	300	286	291	312	347	392	445
109	273	312	361	409	446	465	459	433	395	354	320	299	294	307	335	376	424	475
110	283	327	378	424	454	464	451	420	381	343	315	302	306	326	361	406	455	502
111	297	345	395	437	461	462	442	408	369	336	314	309	322	349	389	435	484	525
112	314	365	413	449	465	458	432	397	360	332	318	321	340	373	417	464	509	541
113	334	386	430	459	467	453	423	387	354	331	325	335	361	398	444	490	529	550
114	357	407	446	467	466	446	414	379	350	334	334	352	383	423	469	512	543	552
115	380	427	459	473	464	439	406	373	348	339	347	370	405	447	492	530	551	545
116	403	445	470	475	460	431	398	368	349	347	361	389	427	470	511	542	551	529
117	425	461	478	475	454	423	391	365	352	356	376	408	447	490	526	547	544	505
118	446	475	483	472	447	415	384	363	356	366	391	426	466	506	536	547	528	473
119	463	484	484	467	438	406	379	362	362	378	406	443	482	519	541	539	505	434
120	477	489	481	459	429	398	374	363	369	389	420	458	496	527	539	524	475	390

The horizontal argument of this table is Arg. I.

Inequalities of the Fundamental Argument.

TABLE XXIV—Continued.

d. 8480	d. 8640	d. 8800	d. 8960	d. 9120	d. 9280	d. 9440	d. 9600	d. 9760	d. 9920	d. 10080	d. 10240	d. 10400	d. 10560	d. 10720	d. 10880	d. 11040	A.
384	349	316	295	291	306	339	383	429	467	488	491	478	455	428	404	390	60
369	336	309	296	302	325	365	411	454	484	497	490	469	440	412	391	383	61
355	325	305	301	316	347	391	437	476	499	483	455	423	395	378	377	377	62
343	318	305	310	334	372	418	462	493	504	495	471	436	402	377	366	374	63
332	313	309	323	355	398	444	483	504	504	485	453	415	381	361	357	374	64
324	312	317	340	378	423	467	498	509	497	469	431	391	360	346	352	377	65
319	315	329	360	402	448	486	508	508	484	448	405	365	339	334	350	384	66
317	322	345	382	427	470	500	511	499	466	423	377	340	321	326	352	395	67
320	333	363	405	450	488	509	508	484	442	394	349	317	307	322	359	411	68
326	348	384	428	471	501	511	497	463	414	363	321	296	297	324	371	430	69
336	365	406	450	488	509	507	481	437	384	332	295	280	292	331	388	452	70
349	385	428	470	500	510	496	459	407	351	302	272	268	294	345	410	478	71
366	406	449	486	508	505	479	432	375	318	275	255	264	302	364	436	506	72
385	428	469	498	509	494	457	402	341	287	252	243	266	317	389	466	533	73
406	449	485	506	504	478	430	368	307	259	233	239	276	338	419	498	559	74
428	468	497	508	494	456	399	335	276	235	222	241	292	366	453	531	581	75
449	485	505	504	478	429	367	301	248	216	217	251	315	400	489	562	597	76
468	497	508	494	457	399	333	270	224	205	220	269	345	437	526	589	606	77
485	506	505	479	431	368	300	242	206	201	231	295	381	477	562	611	604	78
499	509	496	459	403	335	269	219	194	204	251	326	421	518	594	624	592	79
508	507	482	435	372	303	242	201	189	215	277	363	465	558	620	626	570	80
512	499	464	408	341	274	219	189	193	235	309	405	509	593	637	617	538	81
511	487	441	379	310	246	201	185	204	261	347	449	551	622	642	596	499	82
504	469	415	348	281	223	189	188	223	294	390	494	588	642	635	564	455	83
492	447	386	318	254	205	184	198	248	332	434	538	619	650	615	523	410	84
475	421	356	289	231	193	186	216	281	374	479	577	640	645	583	476	366	85
453	393	327	263	213	188	196	240	318	418	522	609	651	626	541	426	327	86
428	364	298	240	201	189	212	271	359	462	562	633	647	595	491	370	295	87
401	335	272	222	194	196	234	306	401	505	595	644	630	551	437	331	272	88
371	307	249	208	193	210	263	345	445	543	619	642	599	499	383	294	258	89
342	281	230	201	200	231	296	386	486	576	631	627	556	443	332	266	255	90
314	258	217	200	212	258	333	428	524	600	631	597	503	385	290	248	260	91
288	239	209	205	231	289	372	467	556	614	617	555	445	332	258	241	272	92
265	226	207	216	256	324	411	504	580	615	589	502	385	285	237	246	291	93
246	217	212	234	285	361	450	536	595	603	549	444	329	250	229	260	315	94
233	215	222	256	318	399	486	560	598	578	498	383	280	227	233	281	341	95
225	219	239	284	354	430	517	575	589	541	441	326	241	218	248	308	369	96
224	230	261	316	390	471	542	580	567	493	380	275	217	223	273	338	396	97
228	246	288	350	427	502	559	574	532	437	322	235	207	239	303	370	422	98
239	268	318	386	461	527	565	555	487	378	270	208	212	266	338	403	446	99
256	294	352	422	491	544	561	524	434	320	228	197	230	300	374	433	467	100
278	325	387	456	517	553	545	482	377	267	200	201	258	339	411	461	484	101
304	358	422	486	535	551	518	433	319	224	187	220	295	379	445	485	496	102
334	393	456	511	545	538	480	378	266	194	190	249	337	420	476	504	503	103
367	427	486	530	545	515	433	322	222	179	208	288	381	457	503	517	505	104
401	460	511	541	535	480	380	268	189	180	239	333	425	491	524	525	500	105
435	489	530	543	514	437	325	222	171	196	279	379	465	519	538	527	491	106
467	514	541	535	482	386	272	187	169	225	325	426	501	541	546	522	477	107
495	533	544	517	442	333	225	166	183	265	374	468	531	556	547	512	459	108
519	544	537	488	393	279	187	159	210	312	422	506	553	564	541	496	439	109
537	547	520	449	341	230	161	169	248	362	467	537	568	564	529	476	416	110
548	540	493	402	287	189	150	192	294	412	506	561	576	558	512	454	393	111
550	524	456	351	237	159	155	228	344	458	538	576	577	545	491	429	370	112
544	498	411	298	192	143	174	272	395	499	563	584	570	527	466	404	348	113
528	463	362	246	160	143	206	322	443	533	579	584	557	504	439	379	329	114
502	421	309	200	139	157	248	373	486	553	588	578	538	478	413	355	312	115
469	372	257	163	133	185	297	423	523	578	589	565	515	451	387	334	298	116
428	321	210	138	142	224	348	468	551	588	583	546	489	423	362	316	288	117
382	269	170	127	165	270	399	507	571	590	570	524	461	396	340	302	282	118
332	222	142	131	200	322	447	539	584	586	553	498	433	371	322	291	280	119
282	181	126	149	244	374	489	562	589	576	532	471	406	349	308	284	282	120

The quantities tabulated are in units of the fourth decimal of a day.

Inequalities of the Fundamental Argument.

TABLE XXV.

B.	d. o	d. 320	d. 640	d. 960	d. 1280	d. 1600	d. 1920	d. 2240	d. 2560	d. 2880	d. 3200	d. 3520	d. 3840	d. 4160	d. 4480	d. 4800	d. 5120	d. 5440
0	288	251	215	180	150	129	117	115	123	137	158	181	202	220	233	241	243	241
1	325	294	259	222	188	159	135	119	113	115	124	139	158	178	198	215	229	238
2	344	321	293	260	226	194	164	139	121	109	105	108	117	132	151	172	193	213
3	341	329	309	284	255	225	194	165	140	119	103	92	89	93	104	121	143	167
4	316	314	305	290	269	245	218	191	164	138	114	94	78	69	67	74	89	111
5	273	281	282	277	265	250	230	209	185	160	134	109	85	65	49	42	45	58
6	221	235	243	247	245	239	228	215	198	178	156	131	105	79	53	33	22	22
7	170	185	197	206	211	214	212	207	199	187	173	155	131	105	76	46	25	10
8	127	141	152	162	171	179	185	188	189	187	182	172	157	136	110	80	50	24
9	100	107	114	122	131	141	151	160	169	176	180	181	176	165	146	121	91	60
10	92	91	91	94	99	107	117	129	143	156	169	179	185	185	177	162	138	109
11	102	92	85	81	80	83	89	99	114	131	149	167	182	193	197	194	181	159
12	125	109	95	84	76	71	72	77	89	105	126	148	169	189	204	213	212	201
13	154	136	118	101	86	74	67	66	72	83	102	124	149	175	198	216	227	229
14	180	164	146	126	107	90	76	67	65	69	81	101	125	152	180	205	225	239
15	197	186	172	154	135	114	94	79	68	65	69	81	101	126	154	182	208	231
16	199	197	190	178	161	141	119	100	83	71	67	70	82	100	125	153	181	208
17	185	194	197	193	183	167	147	126	105	87	75	69	72	82	100	123	149	177
18	160	178	190	196	195	186	171	152	131	111	93	79	73	74	83	99	120	145
19	128	153	174	190	198	198	190	176	158	137	117	98	85	78	78	86	100	119
20	98	127	154	176	192	201	201	195	182	164	145	125	108	95	87	86	92	104
21	76	105	133	160	183	198	206	207	200	188	172	153	135	119	106	99	98	104
22	66	91	118	146	172	192	206	214	213	207	195	180	163	147	132	122	116	115
23	69	87	111	137	163	185	203	215	220	219	213	202	188	173	160	148	140	136
24	80	93	111	133	157	179	198	213	222	225	224	217	208	195	184	173	165	159
25	96	102	115	133	154	174	194	209	220	227	229	226	220	211	202	194	186	181
26	111	113	121	134	152	170	188	204	217	224	228	229	226	220	214	207	202	198
27	122	120	124	134	148	165	182	197	210	219	225	227	226	223	219	215	211	209
28	128	124	125	132	143	158	174	189	202	212	220	223	224	223	221	218	215	214
29	131	125	123	128	137	150	165	180	194	205	214	219	221	221	220	219	217	216
30	134	126	122	125	131	142	156	171	185	198	208	215	219	220	220	220	219	219
31	141	131	125	125	129	138	150	165	179	193	204	212	218	222	223	223	224	224
32	154	143	135	132	133	140	150	163	176	190	202	212	220	225	228	230	231	233
33	174	163	154	148	146	149	157	167	179	192	204	215	224	230	235	239	241	244
34	198	189	179	172	168	167	172	180	189	200	211	221	230	237	242	247	251	255
35	223	216	209	201	196	193	195	199	206	214	222	231	238	244	250	255	259	263
36	242	240	236	230	225	222	223	224	229	234	239	245	250	253	257	260	263	267
37	252	255	255	253	251	250	250	251	254	258	260	263	264	264	264	263	264	265
38	251	258	263	266	268	270	272	275	278	281	282	282	280	277	272	268	263	260
39	239	248	257	264	271	277	284	290	295	299	302	302	298	292	284	274	264	255
40	220	230	241	251	261	272	283	293	303	311	316	318	316	309	298	285	269	254
41	202	210	220	230	242	255	270	284	298	312	322	328	329	324	314	299	281	260
42	191	194	200	208	218	231	247	265	283	302	318	330	336	336	330	317	298	274
43	193	190	190	192	198	208	222	239	259	282	304	322	335	342	342	334	318	295
44	210	202	194	189	188	191	200	214	233	256	281	305	325	340	348	347	338	319
45	242	230	215	202	192	187	187	195	210	230	254	280	306	328	345	353	352	341
46	284	270	252	232	213	198	188	186	193	206	227	252	280	307	331	348	357	356
47	325	316	298	275	248	224	204	191	186	191	204	224	250	278	306	331	349	358
48	359	357	344	323	294	264	234	209	193	186	189	201	220	246	274	302	326	344
49	375	384	382	367	342	310	274	240	212	193	184	185	196	214	238	265	292	316
50	371	389	399	396	381	354	318	280	243	212	191	180	179	187	203	225	251	275
51	344	370	391	402	401	385	357	319	280	241	209	186	173	169	175	189	208	229
52	301	329	357	381	395	395	380	351	315	274	235	203	178	163	158	160	170	185
53	249	275	304	335	362	378	380	366	340	304	265	227	195	170	153	145	144	150
54	201	217	242	274	307	335	354	358	347	323	290	253	217	186	161	143	132	128
55	166	170	185	210	242	276	306	326	332	324	304	276	243	210	181	156	137	123
56	153	143	145	158	181	212	246	276	297	306	302	287	263	235	206	179	155	135
57	164	142	129	127	137	158	187	219	248	270	282	282	272	254	231	207	182	161
58	196	164	140	123	118	125	142	167	196	224	246	260	265	260	249	232	213	193
59	240	204	171	144	124	116	118	131	151	176	202	224	240	249	250	246	236	223
60	288	251	215	180	150	129	117	115	123	137	158	181	202	220	233	241	243	241

The horizontal argument of this table is Arg. I.

Inequalities of the Fundamental Argument.

TABLE XXV—Continued.

d. 5760	d. 6080	d. 6400	d. 6720	d. 7040	d. 7360	d. 7680	d. 8000	d. 8320	d. 8640	d. 8960	d. 9280	d. 9600	d. 9920	d. 10240	d. 10560	d. 10880	d. 11200	B.
234	224	209	191	170	145	123	97	73	52	35	25	21	26	39	60	85	113	0
243	242	237	226	211	192	169	144	117	91	68	50	39	36	40	55	75	100	1
228	240	245	244	239	227	210	189	163	136	111	88	70	60	55	63	77	96	2
191	213	230	241	247	246	237	222	202	178	152	128	106	91	79	80	87	101	3
138	166	192	214	231	242	243	238	225	207	186	162	140	121	105	101	102	110	4
81	109	139	169	196	216	228	233	230	220	204	185	164	145	127	119	116	119	5
34	55	83	116	148	176	198	212	219	217	209	195	178	160	142	132	126	126	6
7	17	37	66	99	131	160	182	197	204	202	194	182	166	150	139	131	128	7
7	2	10	31	58	89	121	148	170	184	189	187	180	168	154	141	133	128	8
33	14	8	16	34	60	90	120	146	165	176	180	176	168	156	144	134	128	9
78	50	31	24	31	48	73	101	128	151	166	175	176	171	163	150	140	132	10
130	100	74	55	49	55	71	93	119	143	162	174	180	179	174	163	152	143	11
181	155	126	101	84	78	83	98	120	143	163	179	188	191	190	181	171	161	12
220	202	178	151	127	112	107	113	128	147	168	185	198	205	209	202	195	185	13
242	235	219	196	172	151	138	135	142	155	173	191	207	217	225	223	219	212	14
244	249	243	229	209	187	170	159	157	164	178	194	211	224	235	238	239	236	15
229	244	248	244	231	214	195	181	173	173	181	193	209	223	237	244	249	251	16
202	223	236	241	237	227	212	197	185	180	181	189	201	215	229	239	248	254	17
170	194	212	225	229	227	218	206	194	185	182	184	191	202	214	226	236	246	18
141	164	185	202	213	217	215	208	199	190	183	181	183	190	198	208	218	228	19
121	140	161	180	195	203	208	207	202	195	188	184	182	183	186	192	200	208	20
114	128	146	163	180	191	201	205	205	203	198	194	190	187	184	186	188	192	21
120	129	142	157	173	186	198	207	212	214	213	211	207	204	196	194	190	188	22
136	142	150	162	176	189	202	213	221	228	231	234	233	230	222	216	207	198	23
158	160	166	175	186	199	211	223	234	243	251	257	262	262	256	252	240	226	24
179	181	185	192	201	213	224	235	247	258	269	279	288	294	294	293	283	266	25
196	198	202	208	216	226	236	247	259	270	282	295	308	320	327	332	327	314	26
208	210	214	220	227	236	245	255	266	276	288	302	317	333	347	359	363	358	27
214	216	221	227	234	241	250	258	267	276	286	299	314	332	351	370	383	389	28
217	219	224	230	236	242	249	256	262	269	276	286	299	316	337	360	381	397	29
220	222	226	231	237	242	247	251	254	258	261	267	275	288	307	330	356	381	30
225	227	230	235	239	243	246	248	247	247	245	245	247	254	269	286	313	342	31
235	237	240	245	247	250	251	251	247	242	235	228	223	222	229	238	259	286	32
247	250	254	257	261	264	263	262	256	248	236	223	210	200	197	196	206	226	33
259	264	269	274	279	283	283	282	276	265	251	232	213	194	181	168	167	175	34
268	275	282	289	297	302	306	307	303	293	278	258	234	209	186	163	148	143	35
272	279	288	297	308	317	326	331	331	326	313	294	269	241	211	180	154	136	36
268	275	284	295	308	322	335	345	352	353	347	332	311	283	262	216	182	154	37
260	263	270	279	295	311	328	345	358	367	369	363	348	326	297	262	225	190	38
249	246	249	255	268	285	304	325	345	361	373	377	372	359	336	306	272	235	39
240	231	226	227	234	247	266	288	312	335	355	368	375	372	359	339	311	278	40
239	221	208	201	200	207	221	241	265	290	316	337	354	362	359	351	333	308	41
249	224	202	185	174	172	178	191	212	236	263	289	312	330	337	341	334	319	42
268	239	210	184	164	151	146	150	163	182	205	232	258	281	296	310	313	309	43
294	265	232	202	172	149	132	125	127	137	154	176	200	224	244	263	275	280	44
323	296	265	231	197	166	140	122	112	111	118	131	149	170	189	210	226	237	45
346	327	300	268	233	199	166	139	118	106	102	105	114	127	142	160	176	190	46
358	348	330	304	273	239	204	172	144	123	108	100	98	103	110	121	133	145	47
354	355	346	330	307	277	245	213	182	155	132	115	104	99	97	100	105	111	48
333	342	345	339	325	304	279	250	220	192	166	144	127	113	103	97	94	93	49
297	314	325	327	325	313	296	274	251	226	201	179	158	140	125	111	100	92	50
252	272	287	296	302	300	292	279	263	245	226	207	189	170	154	136	120	106	51
204	222	238	252	261	266	266	262	255	246	235	223	209	195	182	165	148	131	52
160	173	186	199	209	218	223	225	226	225	222	218	213	207	200	187	174	158	53
129	133	140	148	156	164	171	176	181	186	191	195	198	201	203	198	192	181	54
114	109	108	110	112	114	119	123	129	137	145	156	166	177	189	193	196	194	55
118	105	96	89	83	80	78	78	81	87	96	109	124	141	159	173	185	193	56
140	121	105	90	77	66	57	50	47	48	53	64	79	99	121	143	163	179	57
173	152	132	113	93	75	58	44	33	27	26	31	43	60	84	109	134	158	58
208	190	170	149	127	105	83	62	43	28	20	17	23	35	55	79	106	133	59
234	224	209	191	170	145	123	97	73	52	35	25	21	26	39	60	85	113	60

The quantities tabulated are in units of the fourth decimal of a day.

TABLES OF
Inequalities of the Fundamental Argument.

TABLE XXVI.

C.	d. o	d. 320	d. 640	d. 960	d. 1280	d. 1600	d. 1920	d. 2240	d. 2560	d. 2880	d. 3200	d. 3520	d. 3840	d. 4160	d. 4480	d. 4800	d. 5120	d. 5440
0	352	329	300	268	234	203	176	155	143	138	142	155	175	201	232	266	300	333
1	360	344	321	292	260	228	200	176	158	149	148	156	171	194	222	253	287	320
2	363	353	336	312	283	252	223	196	176	162	156	159	170	188	213	242	275	308
3	360	357	346	327	302	273	244	217	194	177	167	164	171	184	205	232	263	296
4	352	355	350	337	316	291	264	236	212	192	178	171	173	182	199	223	252	283
5	339	348	349	341	327	306	281	254	229	207	190	180	177	182	195	214	240	271
6	324	336	343	341	332	316	294	270	245	221	202	188	182	182	191	207	230	258
7	306	321	332	336	333	322	304	283	259	235	214	197	187	184	188	200	220	245
8	288	304	318	327	329	324	311	292	270	247	225	206	193	186	186	194	210	232
9	270	286	302	314	321	321	313	298	280	258	236	215	199	189	185	189	200	219
10	255	269	285	300	310	315	312	302	286	266	245	224	206	193	185	185	192	207
11	243	253	268	283	297	306	307	302	290	273	253	232	212	197	186	181	184	195
12	235	241	253	267	282	294	299	291	277	259	239	219	201	187	179	178	184	194
13	232	232	240	252	267	280	289	293	289	279	264	245	225	206	189	178	172	174
14	234	228	231	240	253	266	278	285	285	279	267	250	231	211	192	178	168	166
15	242	230	227	231	241	253	265	275	279	277	268	254	236	216	196	179	166	159
16	256	237	228	226	231	241	253	265	272	273	268	257	241	221	201	182	166	155
17	275	251	234	226	226	232	243	254	263	268	266	259	245	227	206	186	167	153
18	299	269	246	232	226	227	234	245	254	261	263	259	249	233	213	192	171	153
19	327	293	265	244	231	227	229	237	246	255	259	259	251	238	220	199	177	156
20	357	321	288	261	242	231	229	232	240	249	255	257	253	243	227	207	185	162
21	390	352	315	284	258	241	233	231	236	243	251	255	254	247	235	216	194	170
22	424	385	347	311	280	257	242	235	235	240	247	253	255	251	242	226	205	181
23	457	420	380	342	307	278	257	243	239	240	245	251	255	254	248	235	217	194
24	488	454	415	376	338	304	277	257	247	243	245	250	255	257	254	244	229	208
25	516	486	450	411	371	334	302	276	259	251	249	251	256	259	259	253	241	223
26	540	516	484	446	407	367	331	300	277	263	256	255	258	261	263	261	252	237
27	559	542	515	480	442	402	363	328	300	279	267	261	261	264	267	268	263	252
28	572	561	541	512	476	437	398	359	327	301	282	271	268	269	272	274	272	265
29	577	575	562	539	508	471	432	393	357	326	302	286	278	275	277	279	280	276
30	574	581	576	561	536	503	466	427	389	354	325	304	290	284	283	285	287	286
31	563	580	584	576	558	532	498	460	422	385	352	326	307	296	291	291	293	295
32	545	570	583	584	574	554	526	492	454	417	381	351	327	311	301	299	300	302
33	518	552	574	584	583	571	549	520	485	448	411	378	350	329	315	308	307	308
34	484	526	556	576	584	580	566	542	512	477	441	406	375	349	331	319	315	315
35	445	492	531	559	576	581	575	559	534	503	469	434	401	372	349	333	324	321
36	400	452	498	534	560	574	577	569	551	525	494	461	427	395	369	349	336	329
37	351	407	458	502	536	559	570	571	561	541	515	484	451	419	390	366	349	338
38	300	359	414	463	504	536	556	566	563	551	531	504	473	442	411	385	363	348
39	249	308	365	419	466	505	534	552	558	554	540	519	492	462	432	403	379	360
40	200	257	315	371	423	468	504	531	545	549	543	528	506	479	450	422	395	373
41	154	207	264	321	376	426	469	502	526	538	539	531	515	493	466	438	411	386
42	112	160	214	271	327	381	429	468	499	519	529	528	518	501	478	452	425	399
43	77	119	168	223	278	333	385	430	467	495	512	518	516	504	486	464	438	412
44	50	84	127	177	231	286	339	388	430	465	489	503	507	502	490	471	448	423
45	31	56	92	136	186	240	293	344	391	430	461	482	494	495	489	475	455	432
46	20	37	65	102	147	197	249	300	350	393	429	457	475	483	483	474	459	439
47	19	26	45	74	113	158	208	258	308	355	395	428	452	467	473	470	459	443
48	26	24	34	54	86	125	170	219	268	316	360	397	426	447	459	462	456	445
49	40	30	31	43	66	98	139	184	231	279	324	364	398	424	442	450	450	443
50	62	43	36	39	54	79	113	153	197	243	289	331	369	400	422	436	442	439
51	89	64	48	43	50	67	94	128	168	212	257	300	339	374	401	420	431	433
52	121	90	67	54	53	62	81	110	144	184	227	270	311	348	379	402	418	425
53	155	120	91	72	63	64	76	97	126	162	201	243	284	322	356	383	404	416
54	191	153	120	94	78	72	77	91	114	144	180	219	259	298	334	364	388	405
55	226	187	151	121	99	86	83	91	107	132	163	199	237	276	313	346	373	394
56	260	221	183	150	123	104	95	96	106	124	150	183	218	256	293	327	357	382
57	290	253	216	181	150	126	111	106	109	122	142	170	203	238	275	310	342	370
58	316	283	247	211	178	151	131	119	117	123	139	162	190	224	258	294	327	357
59	337	308	275	241	207	177	153	136	128	129	139	157	181	211	244	279	313	345
60	352	329	300	268	234	203	176	155	143	138	142	155	175	201	232	266	300	333

The horizontal argument of this table is Arg. I.

Inequalities of the Fundamental Argument.

TABLE XXVI—Continued.

d. 5760	d. 6080	d. 6400	d. 6720	d. 7040	d. 7360	d. 7680	d. 8000	d. 8320	d. 8640	d. 8960	d. 9280	d. 9600	d. 9920	d. 10240	d. 10560	d. 10880	d. 11200	C.
362	387	406	418	421	417	405	386	362	336	308	283	261	247	240	241	250	263	0
352	379	402	418	426	426	418	403	381	355	326	298	273	253	240	235	239	249	1
340	370	396	417	429	434	430	419	400	376	347	318	289	265	246	235	232	237	2
329	361	389	413	431	440	441	434	419	397	370	340	309	281	257	241	231	230	3
317	350	381	408	430	444	450	418	438	419	394	364	333	301	273	250	235	228	4
303	337	371	401	426	445	457	460	454	440	418	390	359	326	294	266	245	231	5
290	324	358	391	420	444	460	469	469	459	441	417	386	353	319	287	260	240	6
275	309	344	379	411	439	461	475	480	476	463	442	415	382	347	312	281	255	7
260	293	328	364	399	431	457	477	488	490	483	467	443	412	377	341	306	275	8
245	276	310	347	384	419	450	475	492	500	499	489	469	442	408	372	335	300	9
229	258	291	328	366	403	438	468	491	506	511	507	493	470	440	404	367	329	10
213	239	270	306	345	384	422	457	485	506	519	521	513	496	470	437	400	362	11
198	220	249	283	321	362	402	441	474	502	521	530	530	519	498	469	434	396	12
184	202	227	259	296	337	379	420	458	491	517	534	540	536	522	498	467	430	13
171	184	205	234	269	309	352	395	437	475	507	531	545	549	542	524	498	465	14
160	168	184	209	241	279	322	367	411	454	491	522	544	555	556	546	525	497	15
150	153	165	185	213	248	290	335	381	427	470	506	535	555	564	561	548	525	16
143	141	148	162	186	217	256	300	347	396	442	484	520	547	564	570	565	549	17
139	132	133	142	160	187	222	264	310	360	409	456	498	532	558	572	575	567	18
138	126	122	125	137	158	189	227	272	321	372	423	469	510	543	567	579	579	19
141	125	114	111	117	132	157	191	232	280	331	384	435	481	521	553	574	583	20
147	127	111	102	101	110	128	156	194	238	288	342	395	446	492	531	560	579	21
156	133	112	97	90	92	103	125	157	197	244	297	352	406	456	502	539	566	22
168	142	118	98	85	80	84	98	123	158	201	251	305	361	415	466	511	545	23
183	155	128	104	85	73	69	76	93	122	159	205	257	313	370	424	475	517	24
199	171	142	115	91	72	62	60	70	90	121	162	210	264	321	378	433	481	25
216	190	160	130	102	78	60	51	52	65	88	122	165	215	271	329	386	439	26
234	209	180	149	118	90	66	49	42	46	61	87	123	169	221	278	336	393	27
251	229	203	172	139	107	78	55	40	35	40	58	87	126	174	228	285	343	28
267	249	225	196	163	129	96	67	45	32	28	37	57	88	130	179	234	292	29
280	268	248	222	190	155	119	86	58	37	25	24	35	57	92	135	186	241	30
292	284	269	247	217	183	147	110	77	49	29	19	21	34	60	96	141	193	31
302	298	288	270	245	213	177	139	102	69	42	23	16	20	36	64	102	148	32
310	310	304	291	271	243	209	171	132	94	62	36	19	14	21	39	69	109	33
317	319	317	309	294	271	241	204	165	125	88	56	31	17	14	24	45	76	34
323	326	327	324	314	296	271	238	200	160	119	82	51	29	17	17	28	51	35
328	331	334	334	330	318	298	270	235	195	154	113	77	48	28	18	21	35	36
334	335	339	342	341	335	321	299	268	231	191	149	109	74	46	29	22	27	37
341	339	342	346	349	348	340	323	298	266	228	186	144	105	72	47	31	27	38
349	344	344	348	353	355	353	343	324	297	263	224	182	140	102	71	48	35	39
357	348	346	349	354	359	361	357	345	325	296	260	219	177	137	101	71	51	40
367	354	348	348	353	359	365	366	360	347	324	293	256	215	174	134	100	73	41
378	361	351	348	350	356	364	369	369	362	346	322	289	251	211	170	132	100	42
388	369	355	348	347	352	360	368	373	372	363	345	319	285	247	206	166	131	43
399	377	360	349	345	347	354	363	371	376	373	363	343	315	280	242	202	164	44
408	385	365	351	343	341	346	355	365	374	377	373	361	339	310	274	236	198	45
416	393	372	354	342	337	339	346	356	367	375	378	372	357	334	304	268	231	46
423	400	378	358	343	334	331	335	345	356	368	376	376	369	353	328	297	262	47
427	406	384	363	345	332	325	326	333	344	357	369	375	374	365	347	321	290	48
429	411	390	368	348	332	321	318	321	330	343	357	368	373	370	359	340	313	49
430	415	395	373	352	334	319	312	311	317	328	343	356	366	370	366	353	332	50
428	417	400	379	358	337	320	308	303	304	313	326	341	355	364	366	360	345	51
425	417	403	385	364	342	322	307	297	294	299	310	324	340	353	360	361	353	52
420	417	406	390	370	349	327	308	295	287	287	295	307	323	338	350	356	354	53
414	415	409	396	377	356	334	312	295	283	278	281	290	305	321	336	347	351	54
407	412	410	401	385	365	342	320	299	283	273	271	275	287	302	319	333	342	55
399	409	411	405	393	375	353	329	306	287	272	264	264	272	285	301	317	330	56
391	405	411	410	401	385	365	341	317	294	275	262	256	259	268	282	299	314	57
382	399	410	413	408	396	378	355	330	305	282	264	253	250	255	266	281	297	58
372	394	408	416	415	407	391	370	345	319	293	271	255	246	245	252	264	280	59
362	387	406	418	421	417	405	386	362	336	308	283	261	247	240	241	250	263	60

The quantities tabulated are in units of the fourth decimal of a day.

Inequalities of the Fundamental Argument—Factor to be multiplied by m.

TABLE XXVII.

Arg. I.	Factor.	Arg. I.	Factor.	Arg. I.	Factor.	Arg. I.	Factor.	Arg. I.	Factor.					
d.		d.		d.		d.		d.						
0	-59767	801	2200	-49577	+1112	4400	+27420	+1309	6600	+62089	235	8800	+6946	-1545
40	60568	766	2240	48465	1136	4440	28729	1293	6640	61854	268	8840	5401	1552
80	61334	732	2280	47329	1159	4480	30022	1274	6680	61586	302	8880	3849	1557
120	62066	697	2320	46170	1181	4520	31296	1257	6720	61284	334	8920	2292	1561
160	62763	662	2360	44989	1204	4560	32553	1239	6760	60950	368	8960	+731	1565
200	63425	625	2400	43785	1224	4600	33792	1219	6800	60582	401	9000	-834	1567
240	64050	590	2440	42561	1246	4640	35011	1199	6840	60181	434	9040	2401	1569
280	64640	553	2480	41315	1264	4680	36210	1180	6880	59747	467	9080	3970	1570
320	65193	516	2520	40051	1284	4720	37390	1158	6920	59280	499	9120	5540	1570
360	65709	479	2560	38767	1302	4760	38548	1137	6960	58781	532	9160	7110	1568
400	66188	442	2600	37465	1320	4800	39685	1115	7000	58249	563	9200	8678	
440	66630	404	2640	36145	1336	4840	40800	1093	7040	57686	596	9240	10245	1567
480	67034	366	2680	34809	1353	4880	41893	1070	7080	57090	627	9280	11809	1564
520	67400	328	2720	33456	1367	4920	42963	1046	7120	56463	659	9320	13368	1559
560	67728	290	2760	32089	1382	4960	44009	1022	7160	55804	690	9360	14923	1555
600	68018	252	2800	30707	1395	5000	45031	998	7200	55114	721	9400	16473	1550
640	68270	213	2840	29312	1409	5040	46029	973	7240	54393	752	9440	18016	1543
680	68483	175	2880	27903	1420	5080	47002	948	7280	53641	782	9480	19551	1535
720	68658	136	2920	26483	1432	5120	47950	922	7320	52859	812	9520	21077	1526
760	68794	98	2960	25051	1442	5160	48872	895	7360	52047	841	9560	22594	1517
800	68892	59	3000	23609	1452	5200	49767	869	7400	51206	871	9600	24101	1507
840	68951	20	3040	22157	1460	5240	50636	842	7440	50335	900	9640	25597	1496
880	68971	18	3080	20697	1469	5280	51478	814	7480	49435	928	9680	27080	1483
920	68953	57	3120	19228	1476	5320	52292	787	7520	48507	956	9720	28550	1470
960	68896	95	3160	17752	1483	5360	53079	758	7560	47551	984	9760	30006	1456
1000	68801	133	3200	16269	1488	5400	53837	729	7600	46567	1011	9800	31447	1441
1040	68668	171	3240	14781	1494	5440	54566	701	7640	45556	1038	9840	32872	1425
1080	68497	209	3280	13287	1497	5480	55267	671	7680	44518	1064	9880	34280	1408
1120	68288	246	3320	11790	1501	5520	55938	642	7720	43454	1090	9920	35671	1391
1160	68042	285	3360	10289	1503	5560	56580	611	7760	42364	1115	9960	37043	1372
1200	67757	321	3400	8786	1505	5600	57191	582	7800	41249	1140	10000	38396	1353
1240	67436	358	3440	7281	1506	5640	57773	551	7840	40109	1164	10040	39729	1333
1280	67078	395	3480	5775	1507	5680	58324	520	7880	38945	1188	10080	39729	1311
1320	66683	431	3520	4268	1506	5720	58844	489	7920	37757	1211	10120	42330	1290
1360	66252	468	3560	2762	1504	5760	59333	458	7960	36546	1234	10160	43597	1267
1400	65784	502	3600	1258	1502	5800	59791	426	8000	35312	1255	10200	44840	1243
1440	65282	538	3640	+244	1500	5840	60217	394	8040	34057	1277	10240	46050	1219
1480	64744	573	3680	1744	1496	5880	60611	362	8080	32780	1297	10280	46050	1194
1520	64171	608	3720	3240	1492	5920	60973	330	8120	31483	1317	10320	47253	1168
1560	63563	641	3760	4732	1487	5960	61303	297	8160	30166	1337	10360	48421	1141
1600	62922	675	3800	6219	1481	6000	61600	265	8200	28829	1356	10400	49562	1114
1640	62247	708	3840	7700	1474	6040	61865	232	8240	27473	1373	10440	50676	1086
1680	61539	740	3880	9174	1467	6080	62097	200	8280	26100	1391	10480	51762	1058
1720	60799	772	3920	10641	1459	6120	62297	166	8320	24709	1407	10520	52820	1027
1760	60027	804	3960	12100	1450	6160	62463	133	8360	23302	1423	10560	53847	998
1800	59223	836	4000	13550	1441	6200	62596	100	8400	21879	1439	10600	54845	967
1840	58387	865	4040	14991	1431	6240	62696	67	8440	20440	1452	10640	55812	936
1880	57522	895	4080	16422	1420	6280	62763	+33	8480	18988	1466	10680	56748	904
1920	56627	925	4120	17842	1408	6320	62796	-1	8520	17522	1479	10720	57652	872
1960	55702	953	4160	19250	1396	6360	62795	33	8560	16043	1491	10760	58524	838
2000	54749	981	4200	20646	1383	6400	62762	68	8600	14552	1502	10800	59362	805
2040	53768	1008	4240	22029	1370	6440	62694	101	8640	13050	1513	10840	60167	772
2080	52760	1035	4280	23399	1355	6480	62593	134	8680	11537	1522	10880	60939	736
2120	51725	1062	4320	24754	1341	6520	62459	168	8720	10015	1530		-61675	
2160	50663	+1086	4360	26095	+1325	6560	62291	-202	8760	8485	+1539			
2200	-49577		4400	+27420		6600	+62089		8800	+6946				

The quantities tabulated are in units of the fifth decimal of a day.

Inequalities of the Fundamental Argument—Factor to be multiplied by m.

TABLE XXVIII.

Arg. III.	Factor.	Arg. III.	Factor.	Arg. III.	Factor.
d.		d.		d.	
0	132	7520	1164	15040	2022
160	169 + 37	7680	1146	15200	2000
320	210	7840	1129	15360	1972
480	255	8000	1114	15520	1939
640	303	8160	1102	15680	1902
800	353	8320	1091	15840	1859
960	405	8480	1084	16000	1812
1120	460	8640	1079	16160	1760
1280	516	8800	1078	16320	1704
1440	573	8960	1079 + 1	16480	1644
1600	631	9120	1084	16640	1581
1760	689	9280	1092	16800	1514
1920	746	9440	1103	16960	1444
2080	803	9600	1117	17120	1371
2240	860	9760	1135	17280	1297
2400	915	9920	1156	17440	1220
2560	968	10080	1181	17600	1143
2720	1019	10240	1208	17760	1064
2880	1068	10400	1238	17920	985
3040	1114	10560	1271	18080	907
3200	1158	10720	1306	18240	828
3360	1198	10880	1343	18400	751
3520	1235	11040	1383	18560	676
3680	1269	11200	1424	18720	603
3840	1299	11360	1466	18880	532
4000	1325	11520	1509	19040	464
4160	1348	11680	1553	19200	400
4320	1366	11840	1597	19360	339
4480	1382	12000	1641	19520	283
4640	1393	12160	1685	19680	231
4800	1400	12320	1729	19840	184
4960	1404 + 1	12480	1770	20000	142
5120	1405	12640	1811	20160	105
5280	1402	12800	1850	20320	74
5440	1396	12960	1886	20480	48
5600	1387	13120	1920	20640	28
5760	1376	13280	1951	20800	14
5920	1362	13440	1978	20960	5
6080	1346	13600	2003	21120	2
6240	1329	13760	2023	21280	5 + 3
6400	1309	13920	2039	21440	14
6560	1289	14080	2051	21600	28
6720	1268	14240	2058	21760	47
6880	1247	14400	2061 + 3	21920	71
7040	1225	14560	2059	22080	100
7200	1204	14720	2052	22240	133
7360	1184	14880	2039	22400	170 + 37
7520	1164	15040	2022		

TABLE XXIX.

Arg. V.	Factor.	Arg. V.	Factor.	Arg. V.	Factor.
d.		d.		d.	
0	976	7040	319	14080	160
160	968	7200	364 + 45	14240	127
320	956	7360	410	14400	97
480	939	7520	457	14560	71
640	919	7680	504	14720	49
800	894	7840	551	14880	30
960	866	8000	597	15040	16
1120	834	8160	643	15200	7
1280	799	8320	687	15360	2
1440	761	8480	729	15520	1 + 4
1600	720	8640	769	15680	5
1760	678	8800	806	15840	14
1920	634	8960	841	16000	26
2080	588	9120	872	16160	43
2240	541	9280	900	16320	65
2400	494	9440	924	16480	90
2560	447	9600	943	16640	119
2720	401	9760	959	16800	151
2880	355	9920	970	16960	187
3040	310	10080	977 + 2	17120	225
3200	267	10240	979	17280	266
3360	226	10400	977	17440	309
3520	188	10560	971	17600	354
3680	152	10720	959	17760	399
3840	120	10880	944	17920	446
4000	91	11040	924	18080	493
4160	65	11200	900	18240	540
4320	44	11360	873	18400	587
4480	27	11520	842	18560	632
4640	14	11680	807	18720	677
4800	5	11840	770	18880	719
4960	1	12000	730	19040	760
5120	2 + 1	12160	688	19200	798
5280	7	12320	644	19360	833
5440	16	12480	598	19520	865
5600	30	12640	552	19680	893
5760	48	12800	505	19840	918
5920	70	12960	458	20000	939
6080	96	13120	411	20160	955
6240	126	13280	365	20320	968
6400	159	13440	320	20480	975
6560	196	13600	277	20640	979 + 4
6720	234	13760	235	20800	978
6880	276	13920	196	20960	972
7040	319 + 43	14080	160	21120	962

The quantities tabulated are in units of the fifth decimal of a day.

Inequalities of the Fundamental Argument—Factor to be multiplied by m.

TABLE XXX.

A.	d. o	d. 320	d. 640	d. 960	d. 1280	d. 1600	d. 1920	d. 2240	d. 2560	d. 2880	d. 3200	d. 3520	d. 3840	d. 4160	d. 4480	d. 4800	d. 5120	d. 5440
1	51	31	31	44	61	80	103	125	142	156	170	187	202	215	220	213	194	170
3	35	26	34	53	73	95	117	135	147	160	175	193	210	222	224	213	191	167
5	23	26	43	66	90	113	132	144	152	164	180	199	216	226	224	208	185	163
7	19	32	56	84	109	132	146	152	158	170	187	205	221	226	218	199	175	158
9	21	44	73	103	130	149	158	160	165	177	193	210	221	221	206	185	165	152
11	28	59	92	124	150	165	168	168	172	183	198	212	217	209	190	168	153	147
13	40	76	111	144	168	178	176	175	179	190	202	210	208	193	170	151	141	141
15	53	92	129	162	183	188	184	183	187	196	205	205	194	172	149	133	130	136
17	65	105	144	177	194	195	191	191	195	202	205	197	177	151	129	119	121	130
19	75	116	156	187	201	201	198	200	203	207	203	186	159	131	113	107	113	124
21	81	124	165	194	205	206	205	208	211	210	198	173	142	115	100	99	108	117
23	83	128	170	196	207	210	212	217	219	212	192	162	129	104	93	94	103	111
25	84	131	172	196	207	213	219	224	224	212	186	152	120	98	90	93	101	105
27	84	132	171	194	206	216	225	230	227	210	180	145	116	98	93	95	99	100
29	85	132	169	190	205	218	229	234	227	206	175	143	118	103	97	98	99	96
31	88	133	167	187	204	219	231	235	225	202	172	144	123	110	105	103	100	94
33	93	134	164	184	202	218	230	232	221	198	172	149	131	120	113	109	102	93
35	101	136	162	181	200	217	227	227	215	196	175	156	140	129	121	113	104	93
37	110	139	162	180	198	213	222	221	210	194	178	163	149	138	128	118	107	95
39	122	144	163	179	195	208	214	213	204	194	182	169	155	144	132	121	108	95
41	135	151	166	179	192	202	206	205	200	193	184	172	159	148	135	122	109	95
43	149	159	171	180	189	195	198	197	195	191	183	172	160	148	135	121	107	93
45	163	169	176	181	186	189	190	191	191	187	179	169	157	145	131	118	104	90
47	177	180	182	182	183	182	183	185	185	181	172	162	151	139	126	114	100	86
49	191	190	188	183	180	177	177	178	177	171	162	153	142	132	120	108	95	83
51	204	199	193	184	177	173	172	170	166	159	149	141	132	124	114	104	92	80
53	214	207	196	184	175	168	165	161	153	144	135	128	122	116	109	101	90	80
55	221	212	198	184	172	164	158	149	138	129	121	116	113	110	106	100	93	83
57	226	214	199	182	169	159	148	136	123	113	107	105	105	106	106	103	98	87
59	227	215	198	181	166	153	138	122	108	99	95	97	101	106	108	109	105	95
61	226	214	196	179	162	146	127	109	95	87	87	92	99	107	114	117	113	104
63	224	212	194	178	159	139	117	99	85	79	81	89	100	111	121	126	121	113
65	221	211	193	177	157	133	110	90	78	74	79	89	102	116	128	132	127	123
67	219	210	194	177	155	129	105	85	74	72	79	91	105	121	132	135	131	131
69	218	211	196	178	155	127	102	83	73	73	80	92	108	122	132	133	131	138
71	220	214	200	181	156	128	103	84	75	75	82	93	108	120	127	125	128	143
73	222	219	205	185	159	130	105	86	78	83	92	105	114	115	115	115	123	147
75	227	224	209	188	161	133	108	90	81	80	83	90	102	102	100	102	119	149
77	231	228	212	190	163	134	110	93	84	81	81	85	88	86	83	90	115	150
79	235	230	213	189	162	135	112	96	86	80	78	78	75	68	67	82	114	151
81	235	228	209	185	158	133	111	97	86	79	74	70	61	53	56	79	116	154
83	232	221	201	177	151	128	109	96	85	78	71	62	49	41	53	82	122	158
85	223	208	188	164	141	121	105	94	85	77	68	54	40	38	58	92	131	164
87	209	191	171	149	128	111	99	92	85	78	66	50	38	45	71	108	143	173
89	191	171	151	131	114	102	94	90	86	80	66	50	45	60	92	127	158	182
91	171	150	131	114	100	92	89	90	89	83	69	56	60	83	116	147	172	192
93	151	130	112	97	87	84	86	91	93	86	74	69	82	110	141	166	186	201
95	133	112	96	83	76	78	85	94	97	91	83	87	109	139	165	183	197	207
97	121	100	84	72	69	74	85	97	101	96	95	109	136	164	184	197	205	210
99	114	93	76	65	64	72	87	100	103	102	109	132	161	184	198	205	209	210
101	113	90	72	61	61	72	88	100	104	108	125	153	181	198	206	208	208	207
103	117	90	70	58	60	72	89	99	105	116	141	171	194	205	208	208	205	201
105	123	92	69	57	59	72	87	96	105	124	154	183	200	207	207	204	200	194
107	128	93	68	55	58	71	84	93	107	132	164	188	201	205	204	200	194	187
109	131	92	65	52	57	69	80	90	110	139	169	189	199	201	200	196	190	182
111	129	88	59	48	54	65	76	90	114	145	171	187	195	197	198	194	188	178
113	121	79	52	44	51	62	74	92	120	148	170	183	191	196	198	195	188	175
115	108	67	44	41	49	60	75	97	126	151	168	181	190	197	201	199	190	174
117	90	54	37	39	50	62	80	105	131	152	167	180	192	201	206	204	192	173
119	70	41	32	39	53	69	90	115	137	154	167	182	196	207	213	209	194	172
I	51	31	31	44	61	80	103	125	142	156	170	187	202	215	220	213	194	170

The horizontal argument of this table is Arg. I.

Inequalities of the Fundamental Argument—Factor to be multiplied by m.

TABLE XXX—Continued.

d. 5760	d. 6080	d. 6400	d. 6720	d. 7040	d. 7360	d. 7680	d. 8000	d. 8320	d. 8640	d. 8960	d. 9280	d. 9600	d. 9920	d. 10240	d. 10560	d. 10880	d. 11200	A.
147	131	119	109	96	78	58	43	45	72	114	155	186	209	223	226	219	205	1
147	133	123	112	94	72	49	37	46	78	119	156	185	207	222	224	216	204	3
147	137	128	114	92	65	42	34	50	84	122	154	181	204	218	220	213	201	5
147	140	131	114	88	59	37	35	56	89	122	151	178	200	214	216	210	199	7
147	143	133	113	83	53	36	40	63	92	121	148	174	196	210	213	208	198	9
147	144	132	109	78	50	38	47	70	95	120	146	172	194	207	211	208	199	11
145	143	128	103	72	49	44	56	77	98	121	147	172	193	206	211	210	203	13
141	138	121	95	67	50	52	66	84	102	124	150	174	194	208	214	214	207	15
136	131	112	86	64	55	62	76	91	108	131	156	179	199	212	219	219	213	17
128	121	102	79	63	61	72	85	100	117	139	164	186	205	218	224	224	218	19
119	110	91	73	64	70	82	95	109	128	150	173	194	212	224	229	228	220	21
110	99	82	70	69	79	92	105	121	140	162	184	203	218	228	232	230	218	23
100	89	76	69	75	89	102	116	133	154	174	194	211	224	230	232	226	211	25
93	81	72	72	83	98	112	128	147	167	185	203	217	226	230	232	218	200	27
87	77	72	78	91	106	122	139	159	178	195	211	221	226	225	218	204	184	29
84	75	75	84	98	114	131	150	170	188	203	215	221	222	217	205	186	165	31
83	76	79	90	105	120	138	159	179	196	208	217	219	215	205	188	167	146	33
84	79	84	95	108	124	144	166	185	200	211	217	215	207	192	171	149	127	35
85	82	87	97	110	126	149	170	189	204	213	216	211	199	179	156	133	112	37
86	83	88	96	109	127	150	173	192	206	214	214	207	191	168	144	122	101	39
86	83	86	93	105	126	151	174	193	207	215	214	204	186	162	138	116	94	41
84	81	81	87	101	124	150	175	195	209	217	215	204	185	161	138	115	91	43
81	76	75	81	97	123	151	176	197	212	220	218	206	187	165	142	117	90	45
77	70	67	75	95	123	152	179	201	216	224	222	211	194	174	150	120	90	47
72	64	62	72	96	125	156	183	205	221	228	227	217	203	184	157	123	89	49
69	60	59	74	100	131	162	189	210	225	233	232	225	213	193	161	122	85	51
68	60	62	81	109	140	169	194	214	228	235	237	232	221	197	160	116	79	53
70	63	70	92	122	151	178	199	216	229	236	239	236	223	195	153	106	69	55
75	73	85	109	138	164	186	203	216	227	234	239	236	219	184	138	91	57	57
85	87	104	130	155	176	192	204	213	222	230	235	229	206	166	118	73	44	59
98	106	126	151	172	187	196	202	208	216	223	226	215	186	142	94	54	33	61
113	127	149	172	187	196	197	201	208	214	212	212	195	159	113	69	37	25	63
129	148	171	190	198	199	195	192	194	199	203	194	170	129	84	45	23	23	65
145	168	190	204	206	199	192	187	188	191	189	173	142	99	57	26	16	27	67
159	184	204	212	208	198	189	183	183	183	175	150	113	71	34	14	15	36	69
169	196	213	216	209	196	187	183	181	176	159	127	87	47	18	8	21	50	71
177	203	216	217	208	195	188	185	181	169	144	106	65	29	8	9	32	66	73
181	206	217	215	206	198	193	191	182	163	130	88	48	17	5	16	46	84	75
184	206	215	213	207	203	201	198	184	156	117	74	36	11	7	26	61	101	77
183	205	213	213	211	211	211	205	184	150	106	63	28	9	13	37	74	116	79
184	204	212	215	218	222	221	211	183	142	97	55	23	10	20	47	85	128	81
186	204	214	220	227	232	229	212	179	134	89	48	21	13	25	54	92	136	83
190	206	218	227	236	241	234	210	172	126	82	43	19	14	28	57	97	143	85
195	210	223	234	244	246	234	205	163	118	74	38	17	15	29	57	100	147	87
201	215	228	240	248	246	228	195	153	108	66	33	15	13	26	57	103	149	89
208	220	232	243	248	241	218	183	142	99	59	29	12	10	24	58	106	150	91
213	223	234	242	242	230	205	169	130	90	53	26	9	7	23	61	110	151	93
216	224	232	236	232	216	189	155	118	82	48	23	6	5	27	68	115	151	95
216	221	226	225	217	199	172	142	108	75	45	21	6	8	35	79	122	153	97
212	214	215	211	199	180	156	129	100	71	44	21	8	17	50	94	130	155	99
206	205	202	194	181	163	141	119	93	69	44	23	16	33	70	110	140	158	101
198	193	186	176	162	147	129	110	89	68	45	28	29	54	94	128	150	163	103
189	180	171	158	145	132	118	103	86	67	47	37	48	80	118	146	161	170	105
179	168	156	143	131	120	109	98	83	66	51	49	72	108	142	163	173	177	107
171	156	142	130	119	111	102	92	79	64	56	66	97	135	164	179	184	185	109
163	146	131	120	110	103	96	87	74	63	63	85	123	160	183	193	195	192	111
157	139	123	112	104	97	90	80	68	61	73	105	146	179	198	206	205	199	113
153	133	118	108	100	93	83	71	60	61	84	123	164	193	209	215	212	203	115
150	131	116	107	98	88	75	62	53	62	95	138	177	203	217	222	217	206	117
148	130	117	107	97	83	67	52	48	66	106	149	184	207	222	226	219	207	119
147	131	119	109	96	78	58	43	45	72	114	155	186	209	223	226	219	205	1

The quantities tabulated are in units of the fifth decimal of a day.

Inequalities of the Fundamental Argument—Factor to be multiplied by m.

TABLE XXXI.

B.	d. o	d. 640	d. 1280	d. 1920	d. 2560	d. 3200	d. 3840	d. 4480	d. 5120	d. 5760	d. 6400	d. 7040	d. 7680	d. 8320	d. 8960	d. 9600	d. 10240	d. 10880	d. 11520
0	24	23	28	35	44	56	70	83	96	107	117	124	127	122	109	90	68	48	35
1	24	19	21	25	33	44	57	71	85	97	109	119	126	127	119	103	82	60	45
2	28	20	18	20	25	33	45	58	71	84	97	109	120	126	124	113	95	74	58
3	36	26	21	20	21	26	35	46	57	69	82	95	109	119	123	119	106	87	71
4	48	36	28	24	21	23	28	35	44	54	66	79	93	108	118	120	113	99	84
5	60	48	39	32	27	24	25	28	34	41	50	61	76	93	107	116	115	107	95
6	71	61	52	43	35	29	26	25	27	30	35	45	58	76	93	107	113	111	102
7	80	73	65	56	46	37	30	25	23	22	24	30	42	58	78	96	107	111	106
8	85	82	76	68	58	46	36	29	22	18	17	19	27	42	62	82	98	107	106
9	86	87	85	78	68	56	44	34	25	18	13	12	17	28	46	67	86	98	102
10	83	88	89	85	77	65	53	41	30	21	14	9	10	17	33	52	72	87	95
11	77	85	90	89	84	73	61	49	37	27	18	10	7	10	21	39	58	74	85
12	68	79	87	90	87	79	68	57	46	35	24	14	7	6	13	27	44	60	74
13	57	71	81	87	87	82	74	65	54	44	33	22	12	6	8	17	32	46	61
14	49	61	73	81	85	83	78	71	63	55	45	33	21	11	7	10	21	34	48
15	40	51	63	73	80	82	80	76	71	65	57	46	32	19	9	7	12	23	35
16	33	41	53	64	73	78	80	80	78	75	69	60	46	30	16	8	8	14	23
17	29	33	43	54	65	73	78	81	83	83	80	73	61	44	27	13	7	9	14
18	29	28	35	45	56	66	73	79	84	88	89	85	75	59	40	22	11	8	9
19	33	27	30	38	48	58	68	75	83	89	94	94	88	73	54	35	19	10	8
20	41	30	28	33	42	51	61	70	78	87	94	99	97	86	69	49	30	17	11
21	52	37	31	32	38	46	55	63	72	81	91	99	101	95	81	63	44	28	19
22	65	47	37	35	38	43	50	57	64	74	84	94	100	99	91	75	58	41	30
23	78	60	47	41	41	43	48	52	57	65	74	85	95	99	96	86	71	55	43
24	91	74	59	51	47	47	49	50	52	56	64	75	86	95	97	92	82	68	57
25	101	87	72	62	56	53	52	50	49	49	54	63	76	87	95	95	89	80	70
26	108	97	84	73	66	61	58	53	48	45	46	53	65	78	90	95	91	90	81
27	111	104	93	83	76	70	65	58	51	44	42	45	55	69	83	92	96	96	89
28	109	108	100	91	84	78	72	64	55	46	40	40	47	61	76	88	96	99	96
29	104	107	102	96	90	84	78	70	60	49	41	38	42	54	69	83	94	100	99
30	95	102	101	97	92	87	82	75	66	54	44	38	39	48	62	78	90	98	100
31	84	94	97	95	91	88	84	79	71	60	49	40	38	44	57	72	85	94	100
32	71	84	89	90	88	86	84	81	75	65	54	44	39	41	51	65	79	89	96
33	57	72	79	82	82	82	82	81	78	70	59	48	41	39	46	58	71	81	90
34	43	59	68	72	74	76	78	80	79	74	65	53	44	39	41	50	61	72	81
35	30	45	56	61	65	69	73	78	80	77	70	59	48	39	37	42	51	61	70
36	19	33	43	50	55	61	67	74	79	80	75	66	53	42	36	35	41	50	58
37	10	22	31	38	45	52	60	69	78	82	80	72	60	47	36	31	32	38	44
38	5	13	21	28	35	43	52	64	74	82	83	78	67	53	39	30	26	29	33
39	5	8	13	19	26	34	44	56	69	80	85	83	75	61	45	33	24	23	24
40	9	8	10	13	19	26	36	48	62	75	84	86	81	69	54	39	27	21	19
41	17	12	10	11	14	20	28	40	54	68	79	85	84	76	62	47	34	24	19
42	29	20	15	13	14	16	22	31	44	59	72	81	84	80	70	57	44	32	25
43	42	31	24	20	17	16	19	25	35	48	61	73	79	80	76	67	55	43	35
44	56	45	35	29	24	20	18	20	26	37	49	62	71	77	78	74	66	56	47
45	69	58	48	41	33	26	21	18	20	27	37	49	61	70	76	77	74	68	60
46	80	71	62	53	44	35	26	19	17	19	25	36	48	60	70	77	79	78	72
47	88	82	74	66	57	46	35	24	17	15	17	24	36	49	62	73	80	84	81
48	93	90	84	77	69	58	44	31	21	14	12	16	25	37	51	65	77	86	87
49	96	96	92	87	79	69	55	41	27	18	12	12	17	27	41	56	71	83	89
50	97	99	98	94	88	79	66	51	37	25	16	12	14	20	32	47	62	77	86
51	96	100	101	99	94	87	76	63	49	36	25	18	15	17	25	38	53	68	81
52	93	99	101	101	99	94	85	74	61	49	37	27	21	19	22	30	44	58	73
53	88	96	100	101	101	99	93	85	74	63	51	40	31	25	23	26	36	48	63
54	81	89	95	98	100	101	99	93	86	77	67	56	45	35	28	26	30	40	53
55	72	81	88	93	97	100	102	100	96	90	83	73	62	49	37	29	28	33	43
56	61	70	77	84	91	97	102	104	104	102	98	90	79	65	50	36	29	29	35
57	49	57	65	73	81	90	98	104	109	110	109	105	96	82	64	47	34	29	29
58	38	44	52	60	70	81	91	101	109	114	117	116	111	98	80	60	42	32	27
59	29	32	39	47	57	69	81	94	104	113	120	123	121	112	96	75	54	38	29
60	24	23	28	35	44	56	70	83	96	107	117	124	127	122	109	90	68	48	35

The horizontal argument is Arg. I. The quantities tabulated are in units of the fifth decimal of a day.

*Inequalities of the Fundamental Argument.*TABLE XXXII.—Factor to be multiplied by m^3 .

Arg. I.	Factor.	Arg. I.	Factor.	Arg. I.	Factor.
d.		d.		d.	
0	+2051	3600	+ 7	7200	+1679
80	1999	3680	8	7280	1728
160	1945	3760	12	7360	1777
240	1889	3840	19	7440	1824
320	1831	3920	28	7520	1871
400	1772	4000	40	7600	1917
480	1711	4080	54	7680	1961
560	1649	4160	70	7760	2005
640	1585	4240	88	7840	2047
720	1521	4320	109	7920	2088
800	1456	4400	132	8000	2128
880	1391	4480	156	8080	2166
960	1325	4560	183	8160	2203
1040	1260	4640	211	8240	2237
1120	1194	4720	242	8320	2270
1200	1129	4800	274	8400	2301
1280	1064	4880	308	8480	2330
1360	1000	4960	343	8560	2358
1440	937	5040	380	8640	2382
1520	875	5120	418	8720	2405
1600	814	5200	458	8800	2425
1680	754	5280	499	8880	2443
1760	696	5360	541	8960	2458
1840	640	5440	585	9040	2471
1920	586	5520	629	9120	2481
2000	533	5600	675	9200	2488
2080	483	5680	721	9280	2493
2160	434	5760	769	9360	2494
2240	389	5840	817	9440	2493
2320	345	5920	865	9520	2488
2400	304	6000	915	9600	2481
2480	265	6080	965	9680	2470
2560	229	6160	1015	9760	2457
2640	196	6240	1066	9840	2440
2720	165	6320	1117	9920	2420
2800	137	6400	1169	10000	2397
2880	112	6480	1220	10080	2371
2960	89	6560	1272	10160	2342
3040	69	6640	1323	10240	2310
3120	52	6720	1375	10320	2275
3200	38	6800	1427	10400	2237
3280	26	6880	1478	10480	2196
3360	17	6960	1529	10560	2153
3440	11	7040	1580	10640	2107
3520	8	7120	1630	10720	2058
3600	+ 7	7200	+1679	10800	+2007

The quantities tabulated are in units of the sixth decimal of a day.

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TABLE XXXIV.—Factor to be multiplied by m^3 .

Arg. I.	Factor.
d.	
0	—59
320	58
640	56
960	56
1280	55
1600	55
1920	56
2240	57
2560	57
2880	58
3200	58
3520	59
3840	59
4160	59
4480	59
4800	58
5120	58
5440	58
5760	58
6080	59
6400	59
6720	60
7040	61
7360	62
7680	64
8000	65
8320	66
8640	66
8960	66
9280	66
9600	65
9920	64
10240	62
10560	60
10880	—59

The quantities tabulated are in units of the seventh decimal of a day.

Inequalities of the Fundamental Argument—Factor to be multiplied by m^2 .

TABLE XXXIII.

A.	d. o	d. 320	d. 640	d. 960	d. 1280	d. 1600	d. 1920	d. 2240	d. 2560	d. 2880	d. 3200	d. 3520	d. 3840	d. 4160	d. 4480	d. 4800	d. 5120	d. 5440
1	10	15	21	29	36	44	52	59	67	76	84	92	99	105	109	113	115	115
3	14	20	27	35	43	51	58	66	74	81	89	96	102	106	109	112	113	113
5	20	27	34	42	50	58	65	72	79	86	92	98	102	105	107	108	109	109
7	28	35	42	50	58	64	71	78	84	90	94	98	100	102	103	103	103	103
9	37	44	51	58	65	71	77	82	88	92	95	96	97	97	97	97	97	96
11	46	53	59	66	71	77	82	86	90	92	93	93	92	91	90	90	89	88
13	56	62	68	73	78	82	86	89	91	91	91	89	87	85	83	82	81	79
15	65	70	75	79	83	86	89	90	91	90	87	85	81	79	77	75	73	71
17	74	78	82	85	88	90	91	91	90	87	84	80	76	73	70	68	65	63
19	82	85	87	90	91	92	92	91	88	84	80	75	71	68	64	61	58	55
21	88	90	92	93	94	93	92	89	86	81	76	71	67	63	59	55	52	49
23	94	95	95	96	95	94	91	88	83	78	72	67	63	59	54	50	46	43
25	98	98	98	97	95	93	89	85	80	74	69	64	59	55	50	45	41	38
27	100	100	99	97	95	91	87	82	76	71	65	61	56	52	46	41	37	34
29	101	101	99	96	92	88	83	78	72	67	62	58	53	48	43	38	34	31
31	101	100	97	93	89	84	79	74	68	64	60	55	51	46	41	36	32	31
33	99	97	94	90	85	79	74	69	64	61	57	53	49	44	39	35	32	32
35	96	93	89	84	79	74	69	64	60	57	54	50	47	42	38	35	34	34
37	91	87	83	78	72	67	63	59	56	54	51	48	45	42	39	38	38	39
39	84	80	75	70	65	61	57	55	53	51	49	47	45	43	42	42	43	46
41	76	72	67	62	58	54	52	50	49	48	47	46	46	45	46	48	51	55
43	67	63	58	54	50	48	47	46	46	46	47	47	47	48	49	52	60	64
45	57	53	49	46	44	43	43	44	45	46	47	49	51	55	60	65	70	75
47	47	44	41	39	38	39	40	42	44	46	49	53	57	62	68	75	81	86
49	38	36	34	33	34	36	38	41	45	48	52	57	63	70	78	85	91	96
51	30	29	28	29	31	34	38	42	47	51	57	63	71	79	87	94	100	105
53	24	24	25	27	31	35	40	44	49	55	62	70	78	87	95	103	108	112
55	19	21	23	27	32	37	42	48	54	60	68	77	86	95	103	109	114	117
57	18	20	24	29	35	41	46	52	59	66	74	83	92	100	108	113	117	120
59	19	22	28	33	39	45	51	57	64	72	80	88	97	104	110	115	118	119
61	22	27	33	39	45	51	57	63	69	77	84	92	99	106	110	114	116	117
63	27	33	39	46	52	57	63	68	75	81	88	94	100	105	108	111	112	112
65	35	41	47	53	59	64	69	74	79	85	90	95	99	101	103	105	105	105
67	44	50	56	61	66	70	74	78	82	87	91	93	95	96	97	97	97	96
69	54	60	65	69	73	76	79	82	85	88	89	90	90	90	89	88	88	86
71	64	69	73	77	79	81	83	85	86	87	87	86	84	82	80	79	78	76
73	74	78	81	84	85	86	87	87	87	85	83	80	77	74	72	70	68	65
75	84	87	89	90	90	90	89	88	86	83	79	74	70	66	63	60	58	55
77	93	94	95	95	94	93	91	88	84	79	74	68	63	59	55	51	48	44
79	101	101	100	99	97	95	91	87	82	76	69	63	57	52	47	43	39	35
81	107	106	105	102	100	96	91	85	79	72	65	58	52	46	41	36	31	26
83	112	111	108	105	101	96	90	83	76	68	60	53	47	41	35	29	23	18
85	116	113	110	106	101	95	88	80	72	64	56	49	43	36	29	23	17	12
87	118	115	111	105	100	92	85	76	68	60	53	45	39	32	25	18	11	7
89	119	115	110	104	97	89	81	72	64	56	49	42	35	28	21	13	7	3
91	118	113	108	101	93	85	76	68	60	53	46	39	32	25	17	11	5	2
93	115	110	104	96	88	79	71	63	56	49	43	36	30	23	15	9	5	2
95	111	105	98	90	82	73	65	58	51	45	40	34	28	21	15	10	6	5
97	104	98	91	82	74	66	59	52	47	42	37	32	26	21	16	12	10	11
99	96	89	82	74	66	59	52	47	43	39	35	31	26	22	19	17	17	18
101	87	80	72	64	57	51	46	42	39	37	34	31	28	25	24	24	26	28
103	76	69	62	55	49	44	41	38	37	35	34	32	31	31	32	33	36	39
105	64	57	51	45	41	38	37	35	35	35	35	35	36	38	41	44	48	52
107	52	46	41	37	34	33	33	34	35	36	38	40	43	46	51	56	61	65
109	41	36	32	29	29	30	31	34	36	39	42	46	51	56	62	68	73	77
111	30	26	24	24	25	28	31	35	38	43	48	53	60	67	74	80	85	89
113	21	19	19	20	24	28	33	38	42	48	55	62	69	77	85	91	96	99
115	14	15	16	19	24	30	36	42	48	55	62	70	79	87	94	100	104	107
117	10	12	15	20	27	33	40	47	54	62	70	78	87	95	102	107	110	112
119	9	12	17	24	31	38	45	53	61	69	77	86	94	101	107	111	114	115
1	10	15	21	29	36	44	52	59	67	76	84	92	99	105	109	113	115	115

The horizontal argument of this table is Arg. I.

Inequalities of the Fundamental Argument—Factor to be multiplied by m^2 .

TABLE XXXIII—Continued.

d. 5760	d. 6080	d. 6400	d. 6720	d. 7040	d. 7360	d. 7680	d. 8000	d. 8320	d. 8640	d. 8960	d. 9280	d. 9600	d. 9920	d. 10240	d. 10560	d. 10880	d. 11200	A.
115	113	108	102	93	82	70	59	48	39	32	25	21	18	16	17	20	24	1
112	109	104	97	87	76	65	55	45	37	30	24	21	18	18	20	23	29	3
107	104	98	91	82	71	61	52	44	36	30	26	22	21	22	25	30	36	5
100	97	91	84	76	67	58	50	43	37	32	29	26	26	28	32	37	44	7
93	89	84	77	70	63	56	50	44	40	36	33	32	33	36	41	46	52	9
85	81	76	71	65	60	55	50	46	43	40	39	40	42	46	51	56	62	11
76	73	69	64	60	57	54	51	49	48	46	46	48	51	56	61	66	71	13
68	65	61	59	56	55	54	53	53	53	53	55	58	62	67	72	76	80	15
60	57	55	54	53	54	54	55	56	58	60	63	67	72	77	82	85	88	17
53	50	49	49	51	53	55	58	60	64	67	72	77	83	87	91	94	95	19
46	44	44	46	49	52	56	60	64	69	75	81	87	92	97	100	101	101	21
41	40	41	43	47	52	57	63	68	75	82	89	96	101	105	107	107	106	23
36	36	38	41	46	52	59	66	73	81	89	97	104	109	112	113	112	110	25
33	34	36	41	47	53	61	69	78	87	96	104	111	115	117	117	115	112	27
31	33	36	41	48	55	64	73	83	93	102	110	116	120	121	120	117	113	29
31	34	38	43	50	58	67	77	88	98	108	115	120	123	123	121	117	113	31
33	36	40	46	53	62	72	82	93	103	112	119	123	124	123	120	116	111	33
37	40	45	51	58	67	77	87	98	107	115	120	123	123	122	118	113	108	35
42	46	51	57	64	73	82	92	102	110	116	120	121	120	118	114	108	102	37
50	54	59	65	72	80	88	97	105	111	116	118	118	116	113	108	102	95	39
58	63	68	73	79	86	94	101	107	111	113	113	112	109	105	100	94	87	41
68	73	77	82	87	93	99	103	107	109	109	107	104	100	96	90	84	77	43
79	83	87	91	95	99	102	104	105	105	102	99	95	90	86	80	73	66	45
90	93	96	99	101	103	104	104	101	98	94	90	85	79	74	68	61	55	47
99	102	104	105	106	106	104	101	96	91	85	79	73	68	62	56	50	44	49
108	109	111	111	109	107	102	96	89	82	75	68	61	56	50	44	38	34	51
114	115	115	114	110	105	98	90	81	72	64	57	50	44	38	33	28	25	53
119	119	118	114	109	102	93	83	72	63	54	46	39	33	27	23	20	19	55
121	120	117	113	106	97	86	75	64	54	45	37	30	24	19	16	14	15	57
120	118	114	109	100	90	79	67	56	45	36	29	22	16	12	11	11	13	59
116	114	109	103	94	82	71	59	48	38	30	22	16	11	8	8	10	13	61
111	108	103	95	86	74	63	52	42	33	25	18	12	9	7	8	12	17	63
103	100	94	86	77	67	56	46	37	29	22	16	11	9	9	11	16	23	65
94	90	84	77	68	59	50	42	34	27	21	16	12	11	13	16	22	30	67
84	80	74	67	60	52	45	38	32	26	21	18	15	16	19	23	30	38	69
73	69	64	58	52	45	40	35	31	27	23	21	21	22	27	32	39	47	71
62	58	53	49	44	40	37	34	31	28	26	26	27	31	36	42	49	56	73
51	47	43	40	37	35	34	33	32	31	31	32	35	40	46	52	58	64	75
41	37	34	32	31	31	32	32	33	34	36	39	44	49	56	62	67	73	77
31	28	26	26	26	28	30	32	35	38	42	47	53	59	65	71	76	80	79
22	20	19	20	22	25	29	33	37	43	48	55	62	68	74	79	83	86	81
15	13	13	15	19	23	29	34	40	48	55	63	70	77	82	87	89	91	83
9	8	9	12	17	23	29	37	44	53	62	71	78	85	89	93	94	95	85
4	4	6	10	16	23	31	39	49	59	69	78	86	91	95	97	98	98	87
2	2	5	10	17	24	33	43	54	65	75	84	92	97	99	100	101	100	89
1	2	6	12	19	27	37	48	59	71	81	90	96	100	102	102	101	100	91
2	5	9	15	22	32	42	54	65	77	86	94	99	102	103	102	101	99	93
6	9	14	20	28	38	48	60	71	82	90	96	100	102	102	100	99	96	95
13	16	21	28	35	45	55	66	77	86	93	97	100	100	99	97	95	91	97
21	25	30	37	44	53	63	72	81	88	93	96	97	96	95	92	89	85	99
31	36	41	47	54	62	70	78	85	89	92	93	93	91	89	86	82	78	101
43	48	52	58	64	70	77	82	86	89	89	88	86	84	81	78	74	70	103
56	60	64	69	73	78	82	85	86	86	84	82	79	76	72	69	65	61	105
69	72	76	79	82	85	86	86	85	82	78	74	70	66	63	59	55	52	107
81	84	86	88	90	90	88	85	81	76	70	65	61	57	53	50	46	43	109
92	94	96	96	95	93	89	83	76	69	62	57	52	47	43	40	37	35	111
102	103	103	102	99	94	87	79	70	62	54	48	43	38	34	32	29	28	113
109	109	108	105	100	93	84	74	64	55	47	40	35	30	27	25	23	24	115
114	113	110	106	99	90	80	69	58	48	40	34	28	24	21	20	20	22	117
116	114	110	105	97	86	75	63	53	43	35	29	23	20	18	17	18	22	119
115	113	108	102	93	82	70	59	48	39	32	25	21	18	16	17	20	24	1

The quantities tabulated are in units of the sixth decimal of a day.

Heliocentric longitude.

TABLE XXXV.—True anomaly + Reduction to the Ecliptic.

[The Argument of this Table is the Fundamental Argument.]

Arg.	d. o	Log. D. M.	d. 8	Log. D. M.	d. 16	Log. D. M.	d. 24	Log. D. M.	d. 32	Log. D. M.
d.	° / "		° / "		° / "		° / "		° / "	
0	0 1 8.47	12996	0 19 7.54	12996	0 37 6.59	12995	0 55 5.63	12994	1 13 4.66	12994
40	1 31 3.66	12993	1 49 2.64	12992	2 7 1.60	12991	2 25 0.52	12989	2 42 59.42	12988
80	3 0 58.28	12987	3 18 57.10	12985	3 36 55.89	12983	3 54 54.62	12982	4 12 53.31	12980
120	4 30 51.95	12977	4 48 50.54	12975	5 6 49.07	12973	5 24 47.54	12971	5 42 45.95	12968
160	6 0 44.29	12965	6 18 42.57	12962	6 36 40.77	12959	6 54 38.90	12956	7 12 36.95	12953
200	7 30 34.92	12950	7 48 32.81	12947	8 6 30.61	12943	8 24 28.32	12939	8 42 25.94	12936
240	9 0 23.47	12932	9 18 20.90	12928	9 36 18.22	12923	9 54 15.44	12919	10 12 12.56	12915
280	10 30 9.56	12910	10 48 6.45	12906	11 6 3.22	12901	11 23 59.88	12896	11 41 56.41	12891
320	11 59 52.82	12886	12 17 49.10	12881	12 35 45.25	12875	12 53 41.26	12870	13 11 37.14	12865
360	13 29 32.89	12859	13 47 28.48	12853	14 5 23.94	12847	14 23 19.24	12841	14 41 14.39	12835
400	14 59 9.39	12828	15 17 4.23	12822	15 34 58.91	12816	15 52 53.43	12809	16 10 47.79	12802
440	16 28 41.98	12796	16 46 36.00	12789	17 4 29.84	12781	17 22 23.50	12774	17 40 16.99	12767
480	17 58 10.29	12759	18 16 3.40	12752	18 33 56.33	12744	18 51 49.07	12736	19 9 41.62	12729
520	19 27 33.97	12721	19 45 26.12	12712	20 3 18.07	12704	20 21 9.82	12696	20 39 1.35	12687
560	20 56 52.68	12679	21 14 43.79	12670	21 32 34.69	12661	21 50 25.37	12652	22 8 15.84	12644
600	22 26 6.08	12634	22 43 56.09	12625	23 1 45.87	12616	23 19 35.43	12606	23 37 24.74	12597
640	23 55 13.82	12587	24 13 2.66	12577	24 30 51.26	12567	24 48 39.62	12558	25 6 27.73	12547
680	25 24 15.59	12537	25 42 3.20	12527	25 59 50.56	12517	26 17 37.65	12506	26 35 24.49	12495
720	26 53 11.06	12484	27 10 57.36	12474	27 28 43.40	12463	27 46 29.18	12452	28 4 14.67	12441
760	28 21 59.90	12429	28 39 44.85	12418	28 57 29.52	12407	29 15 13.90	12395	29 32 58.00	12383
800	29 50 41.81	12371	30 8 25.33	12360	30 26 8.56	12348	30 43 51.50	12336	31 1 34.14	12324
840	31 19 16.49	12311	31 36 58.53	12299	31 54 40.27	12286	32 12 21.70	12274	32 30 2.82	12261
880	32 47 43.63	12248	33 5 24.13	12235	33 23 4.31	12222	33 40 44.18	12209	33 58 23.72	12196
920	34 16 2.95	12183	34 33 41.85	12170	34 51 20.42	12156	35 8 58.67	12143	35 26 36.58	12129
960	35 44 14.16	12115	36 1 51.41	12102	36 19 28.32	12088	36 37 4.89	12074	36 54 41.11	12060
1000	37 12 17.00	12045	37 29 52.53	12031	37 47 27.72	12017	38 5 2.56	12002	38 22 37.05	11988
1040	38 40 11.18	11973	38 57 44.96	11958	39 15 18.38	11944	39 32 51.43	11929	39 50 24.13	11914
1080	40 7 56.46	11899	40 25 28.42	11883	40 43 0.02	11868	41 0 31.24	11853	41 18 2.10	11837
1120	41 35 32.57	11822	41 53 2.68	11806	42 10 32.40	11791	42 28 1.75	11775	42 45 30.71	11759
1160	43 2 59.29	11743	43 20 27.48	11727	43 37 55.29	11711	43 55 22.71	11695	44 12 49.73	11679
1200	44 30 16.37	11662	44 47 42.61	11646	45 5 8.45	11629	45 22 33.90	11613	45 39 58.94	11596
1240	45 57 23.58	11579	46 14 47.82	11563	46 32 11.66	11546	46 49 35.09	11529	47 6 58.11	11512
1280	47 24 20.72	11495	47 41 42.92	11477	47 59 4.70	11460	48 16 26.08	11443	48 33 47.03	11425
1320	48 51 7.57	11408	49 8 27.68	11390	49 25 47.38	11373	49 43 6.65	11355	50 0 25.50	11337
1360	50 17 43.92	11319	50 35 1.91	11301	50 52 19.48	11283	51 9 36.62	11265	51 26 53.32	11247
1400	51 44 9.59	11229	52 1 25.43	11211	52 18 40.83	11193	52 35 55.79	11174	52 53 10.32	11156
1440	53 10 24.40	11137	53 27 38.04	11119	53 44 51.24	11100	54 2 3.99	11081	54 19 16.30	11063
1480	54 36 28.17	11044	54 53 39.58	11025	55 10 50.55	11006	55 28 1.06	10987	55 45 11.12	10968
1520	56 2 20.73	10948	56 19 29.88	10929	56 36 38.58	10910	56 53 46.82	10891	57 10 54.60	10871
1560	57 28 1.92	10852	57 45 8.79	10832	58 2 15.19	10813	58 19 21.13	10793	58 36 26.60	10774
1600	58 53 31.61	10754	59 10 36.15	10734	59 27 40.23	10714	59 44 43.84	10694	60 1 46.98	10674
1640	60 18 49.65	10655	60 35 51.85	10635	60 52 53.58	10614	61 9 54.83	10594	61 26 55.61	10574
1680	61 43 55.91	10554	62 0 55.73	10533	62 17 55.08	10513	62 34 53.95	10493	62 51 52.35	10472
1720	63 8 50.26	10452	63 25 47.69	10431	63 42 44.65	10411	63 59 41.12	10390	64 16 37.10	10369
1760	64 33 32.60	10349	64 50 27.62	10328	65 7 22.15	10307	65 24 16.19	10286	65 41 9.75	10265
1800	65 58 2.82	10244	66 14 55.40	10223	66 31 47.50	10202	66 48 39.10	10181	67 5 30.21	10160
1840	67 22 20.83	10139	67 39 10.95	10118	67 56 0.59	10097	68 12 49.73	10075	68 29 38.38	10054
1880	68 46 26.53	10033	69 3 14.19	10012	69 20 1.35	9990	69 36 48.02	9969	69 53 34.18	9947
1920	70 10 19.85	99926	70 27 5.03	99904	70 43 49.70	99883	71 0 33.88	99861	71 17 17.55	99839
1960	71 34 0.73	99818	71 50 43.40	99796	72 7 25.57	99774	72 24 7.25	99753	72 40 48.42	99731
2000	72 57 29.09	99709	73 14 9.25	99687	73 30 48.91	99665	73 47 28.07	99643	74 4 6.73	99622
2040	74 20 44.88	99600	74 37 22.52	99578	74 53 59.67	99556	75 10 36.30	99534	75 27 12.43	99512
2080	75 43 48.06	99489	76 0 23.18	99467	76 16 57.79	99445	76 33 31.89	99423	76 50 5.49	99401
2120	77 6 38.59	99379	77 23 11.17	99357	77 39 43.25	99334	77 56 14.82	99312	78 12 45.88	99290
2160	78 29 16.43	99268	78 45 46.48	99245	79 2 16.01	99223	79 18 45.04	99201	79 35 13.57	99178

In the logarithm of the daily motion the characteristic 2 must be supplied.

Heliocentric longitude.

TABLE XXXV.—True anomaly + Reduction to the Ecliptic—Continued.

[The Argument of this Table is the Fundamental Argument.]

Arg.	d. o	Log. D. M.	d. 8	Log. D. M.	d. 16	Log. D. M.	d. 24	Log. D. M.	d. 32	Log. D. M.
d.	° / "		° / "		° / "		° / "		° / "	
2200	79 51 41.58	09156	80 8 9.08	09134	80 24 36.08	09111	80 41 2.56	09089	80 57 28.54	09066
2240	81 13 54.01	09044	81 30 18.96	09022	81 46 43.41	08999	82 3 7.36	08977	82 19 30.79	08954
2280	82 35 53.71	08932	82 52 16.13	08909	83 8 38.03	08887	83 24 59.43	08864	83 41 20.31	08842
2320	83 57 40.69	08819	84 14 0.56	08797	84 30 19.93	08774	84 46 38.78	08751	85 2 57.12	08729
2360	85 19 14.96	08706	85 35 32.29	08684	85 51 49.11	08661	86 8 5.42	08639	86 24 21.23	08616
2400	86 40 36.52	08593	86 56 51.31	08571	87 13 5.60	08548	87 29 19.38	08526	87 45 32.65	08503
2440	88 1 45.41	08480	88 17 57.67	08458	88 34 9.42	08435	88 50 20.67	08413	89 6 31.41	08390
2480	89 22 41.65	08367	89 38 51.38	08345	89 55 0.61	08322	90 11 9.33	08300	90 27 17.55	08277
2520	90 43 25.27	08255	90 59 32.48	08232	91 15 39.20	08209	91 31 45.41	08187	91 47 51.11	08164
2560	92 3 56.32	08142	92 20 1.03	08119	92 36 5.23	08097	92 52 8.94	08074	93 8 12.14	08052
2600	93 24 14.85	08029	93 40 17.06	08007	93 56 18.76	07984	94 12 19.98	07962	94 28 20.69	07939
2640	94 44 20.91	07917	95 0 20.63	07894	95 16 19.86	07872	95 32 18.59	07849	95 48 16.82	07827
2680	96 4 14.56	07805	96 20 11.81	07782	96 36 8.56	07760	96 52 4.83	07738	97 8 0.60	07715
2720	97 23 55.88	07693	97 39 50.66	07671	97 55 44.96	07648	98 11 38.77	07626	98 27 32.09	07604
2760	98 43 24.92	07581	98 59 17.27	07559	99 15 9.12	07537	99 31 0.50	07515	99 46 51.38	07493
2800	100 2 41.78	07471	100 18 31.70	07448	100 34 21.14	07426	100 50 10.09	07404	101 5 58.55	07382
2840	101 21 46.54	07360	101 37 34.05	07338	101 53 21.07	07316	102 9 7.62	07294	102 24 53.69	07272
2880	102 40 39.28	07250	102 56 24.40	07228	103 12 9.04	07207	103 27 53.20	07185	103 43 36.89	07163
2920	103 59 20.11	07141	104 15 2.85	07119	104 30 45.12	07098	104 46 26.92	07076	105 2 8.26	07054
2960	105 17 49.12	07033	105 33 29.51	07011	105 49 9.44	06990	106 4 48.90	06968	106 20 27.89	06946
3000	106 36 6.42	06925	106 51 44.48	06903	107 7 22.08	06882	107 22 59.22	06861	107 38 35.89	06839
3040	107 54 12.11	06818	108 9 47.87	06797	108 25 23.17	06775	108 40 58.01	06754	108 56 32.40	06733
3080	109 12 6.32	06712	109 27 39.79	06691	109 43 12.81	06670	109 58 45.38	06649	110 14 17.50	06628
3120	110 29 49.16	06607	110 45 20.38	06586	111 0 51.15	06565	111 16 21.47	06544	111 31 51.34	06523
3160	111 47 20.77	06502	112 2 49.75	06481	112 18 18.28	06461	112 33 46.38	06440	112 49 14.04	06419
3200	113 4 41.26	06399	113 20 8.03	06378	113 35 34.37	06358	113 51 0.27	06337	114 6 25.74	06317
3240	114 21 50.77	06296	114 37 15.36	06276	114 52 39.52	06256	115 8 3.26	06235	115 23 26.56	06215
3280	115 38 49.43	06195	115 54 11.88	06175	116 9 33.90	06155	116 24 55.49	06135	116 40 16.66	06115
3320	116 55 37.40	06095	117 10 57.72	06075	117 26 17.62	06055	117 41 37.10	06035	117 56 56.16	06016
3360	118 12 14.81	05996	118 27 33.04	05976	118 42 50.85	05957	118 58 8.25	05937	119 13 25.24	05917
3400	119 28 41.81	05898	119 43 57.98	05879	119 59 13.73	05859	120 14 29.08	05840	120 29 44.02	05821
3440	120 44 58.56	05802	121 0 12.69	05782	121 15 26.42	05763	121 30 39.75	05744	121 45 52.68	05725
3480	122 1 5.21	05706	122 16 17.34	05687	122 31 29.07	05668	122 46 40.41	05650	123 1 51.36	05631
3520	123 17 1.92	05612	123 32 12.08	05594	123 47 21.86	05575	124 2 31.24	05556	124 17 40.24	05538
3560	124 32 48.85	05520	124 47 57.07	05501	125 3 4.92	05483	125 18 12.38	05465	125 33 19.46	05447
3600	125 48 26.16	05429	126 3 32.49	05410	126 18 38.44	05392	126 33 44.01	05374	126 48 49.21	05356
3640	127 3 54.04	05339	127 18 58.49	05321	127 34 2.58	05303	127 49 6.30	05286	128 4 9.65	05268
3680	128 19 12.64	05250	128 34 15.24	05233	128 49 17.53	05216	129 4 19.43	05198	129 19 20.97	05181
3720	129 34 22.15	05164	129 49 22.97	05147	130 4 23.44	05129	130 19 23.56	05112	130 34 23.32	05095
3760	130 49 22.73	05078	131 4 21.80	05062	131 19 20.51	05045	131 34 18.88	05028	131 49 16.90	05011
3800	132 4 14.58	04995	132 19 11.92	04978	132 34 8.91	04962	132 49 5.57	04945	133 4 1.89	04929
3840	133 18 57.87	04913	133 33 53.52	04897	133 48 48.84	04881	134 3 43.82	04864	134 18 38.47	04848
3880	134 33 32.79	04832	134 48 26.79	04817	135 3 20.46	04801	135 18 13.80	04785	135 33 6.83	04769
3920	135 47 59.53	04754	136 2 51.91	04738	136 17 43.97	04723	136 32 35.72	04707	136 47 27.15	04692
3960	137 2 18.27	04677	137 17 9.07	04662	137 31 59.57	04647	137 46 49.75	04632	138 1 39.63	04617
4000	138 16 29.20	04602	138 31 18.47	04587	138 46 7.44	04572	139 0 56.10	04557	139 15 44.46	04543
4040	139 30 32.53	04528	139 45 20.30	04514	140 0 7.77	04499	140 14 54.96	04485	140 29 41.85	04471
4080	140 44 28.44	04457	140 59 14.76	04443	141 14 0.78	04429	141 28 46.52	04415	141 43 31.97	04401
4120	141 58 17.14	04387	142 13 2.04	04373	142 27 46.65	04359	142 42 30.98	04346	142 57 15.04	04332
4160	143 11 58.83	04319	143 26 42.34	04306	143 41 25.58	04292	143 56 8.55	04279	144 10 51.26	04266
4200	144 25 33.70	04253	144 40 15.87	04240	144 54 57.78	04227	145 9 39.44	04214	145 24 20.83	04201
4240	145 39 1.96	04189	145 53 42.83	04176	146 8 23.45	04164	146 23 3.82	04151	146 37 43.94	04139
4280	146 52 23.81	04127	147 7 3.43	04114	147 21 42.80	04102	147 36 21.93	04090	147 51 0.82	04078
4320	148 5 39.46	04066	148 20 17.87	04055	148 34 56.03	04043	148 49 33.96	04031	149 4 11.66	04020
4360	149 18 49.12	04008	149 33 26.36	03997	149 48 3.36	03985	150 2 40.14	03974	150 17 16.68	03963

In the logarithm of the daily motion the characteristic 2 must be supplied.

Heliocentric longitude.

TABLE XXXV.—True anomaly + Reduction to the Ecliptic—Continued.

[The Argument of this Table is the Fundamental Argument.]

Arg.	d. o	Log. D. M.	d. 8	Log. D. M.	d. 16	Log. D. M.	d. 24	Log. D. M.	d. 32	Log. D. M.
d.	° / "		° / "		° / "		° / "		° / "	
4400	150 31 53.00	03952	150 46 29.10	03941	151 1 4.98	03930	151 15 40.64	03919	151 30 16.09	03909
4440	151 44 51.32	03898	151 59 26.33	03887	152 14 1.13	03877	152 28 35.72	03866	152 43 10.10	03856
4480	152 57 44.27	03845	153 12 18.23	03835	153 26 51.99	03825	153 41 25.55	03815	153 55 58.91	03805
4520	154 10 32.07	03796	154 25 5.04	03786	154 39 37.81	03776	154 54 10.39	03766	155 8 42.77	03757
4560	155 23 14.95	03747	155 37 46.95	03738	155 52 18.77	03729	156 6 50.40	03720	156 21 21.85	03711
4600	156 35 53.11	03702	156 50 24.20	03693	157 4 55.11	03684	157 19 25.84	03675	157 33 56.40	03666
4640	157 48 26.78	03658	158 2 56.99	03649	158 17 27.03	03641	158 31 56.91	03633	158 46 26.62	03624
4680	159 0 56.17	03616	159 15 25.55	03608	159 29 54.78	03600	159 44 23.84	03592	159 58 52.74	03584
4720	160 13 21.49	03576	160 27 50.08	03569	160 42 18.53	03561	160 56 46.82	03554	161 11 14.97	03547
4760	161 25 42.98	03540	161 40 10.84	03532	161 54 38.55	03525	162 9 6.12	03518	162 23 33.55	03511
4800	162 38 0.84	03504	162 52 28.00	03497	163 6 55.02	03491	163 21 21.91	03484	163 35 48.67	03478
4840	163 50 15.31	03471	164 4 41.82	03465	164 19 8.20	03459	164 33 34.46	03453	164 48 0.59	03446
4880	165 2 26.60	03440	165 16 52.49	03435	165 31 18.27	03429	165 45 43.94	03423	166 0 9.49	03418
4920	166 14 34.94	03412	166 29 0.27	03407	166 43 25.50	03401	166 57 50.62	03396	167 12 15.64	03391
4960	167 26 40.55	03386	167 41 5.36	03381	167 55 30.08	03376	168 9 54.69	03371	168 24 19.22	03366
5000	168 38 43.65	03362	168 53 8.00	03357	169 7 32.25	03353	169 21 56.41	03348	169 36 20.49	03344
5040	169 50 44.48	03340	170 5 8.39	03336	170 19 32.22	03332	170 33 55.97	03328	170 48 19.65	03324
5080	171 2 43.25	03321	171 17 6.78	03317	171 31 30.24	03313	171 45 53.63	03310	172 0 16.95	03307
5120	172 14 40.20	03303	172 29 3.39	03300	172 43 26.52	03297	172 57 49.59	03294	173 12 12.60	03291
5160	173 26 35.55	03288	173 40 58.45	03285	173 55 21.29	03283	174 9 44.08	03281	174 24 6.83	03278
5200	174 38 29.52	03276	174 52 52.17	03273	175 7 14.78	03271	175 21 37.34	03269	175 35 59.87	03267
5240	175 50 22.35	03265	176 4 44.80	03263	176 19 7.21	03262	176 33 29.59	03260	176 47 51.94	03259
5280	177 2 14.26	03257	177 16 36.56	03256	177 30 58.82	03254	177 45 21.06	03253	177 59 43.28	03252
5320	178 14 5.48	03251	178 28 27.67	03250	178 42 49.83	03250	178 57 11.98	03249	179 11 34.12	03248
5360	179 25 56.25	03248	179 40 18.36	03247	179 54 40.47	03247	180 9 2.58	03247	180 23 24.68	03247
5400	180 37 46.77	03247	180 52 8.87	03247	181 6 30.97	03247	181 20 53.08	03247	181 35 15.18	03247
5440	181 49 37.30	03248	182 3 59.42	03248	182 18 21.56	03249	182 32 43.71	03250	182 47 5.87	03250
5480	183 1 28.05	03251	183 15 50.25	03252	183 30 12.47	03253	183 44 34.71	03254	183 58 56.97	03256
5520	184 13 19.26	03257	184 27 41.58	03258	184 42 3.92	03260	184 56 26.30	03262	185 10 48.71	03263
5560	185 25 11.16	03265	185 39 33.64	03267	185 53 56.16	03269	186 8 18.72	03271	186 22 41.32	03273
5600	186 37 3.96	03275	186 51 26.65	03278	187 5 49.39	03280	187 20 12.18	03283	187 34 35.02	03285
5640	187 48 57.91	03288	188 3 20.86	03291	188 17 43.87	03294	188 32 6.93	03297	188 46 30.05	03300
5680	189 0 53.24	03303	189 15 16.49	03306	189 29 39.81	03310	189 44 3.19	03313	189 58 26.64	03317
5720	190 12 50.17	03320	190 27 13.76	03324	190 41 37.44	03328	190 56 1.19	03332	191 10 25.02	03336
5760	191 24 48.93	03340	191 39 12.92	03344	191 53 36.99	03348	192 8 1.15	03353	192 22 25.41	03357
5800	192 36 49.75	03362	192 51 14.18	03366	193 5 38.70	03371	193 20 3.32	03376	193 34 28.04	03381
5840	193 48 52.85	03386	194 3 17.77	03391	194 17 42.79	03396	194 32 7.91	03401	194 46 33.14	03407
5880	195 0 58.48	03412	195 15 23.93	03418	195 29 49.49	03423	195 44 15.16	03429	195 58 40.95	03435
5920	196 13 6.86	03441	196 27 32.88	03447	196 41 59.02	03453	196 56 25.29	03459	197 10 51.68	03466
5960	197 25 18.20	03472	197 39 44.85	03478	197 54 11.63	03485	198 8 38.54	03492	198 23 5.58	03498
6000	198 37 32.75	03505	198 52 0.06	03512	199 6 27.51	03519	199 20 55.11	03526	199 35 22.84	03533
6040	199 49 50.73	03541	200 4 18.76	03548	200 18 46.93	03555	200 33 15.26	03563	200 47 43.73	03570
6080	201 2 12.36	03578	201 16 41.14	03586	201 31 10.08	03594	201 45 39.18	03601	202 0 8.44	03610
6120	202 14 37.87	03618	202 29 7.46	03627	202 43 37.22	03635	202 58 7.14	03643	203 12 37.23	03652
6160	203 27 7.49	03660	203 41 37.93	03669	203 56 8.54	03678	204 10 39.32	03687	204 25 10.29	03696
6200	204 39 41.44	03705	204 54 12.77	03714	205 8 44.29	03723	205 23 15.99	03732	205 37 47.87	03742
6240	205 52 19.95	03751	206 6 52.21	03761	206 21 24.67	03770	206 35 57.32	03780	206 50 30.17	03790
6280	207 5 3.23	03800	207 19 36.48	03810	207 34 9.93	03820	207 48 43.59	03830	208 3 17.44	03840
6320	208 17 51.51	03850	208 32 25.78	03861	208 47 0.27	03871	209 1 34.97	03882	209 16 9.88	03893
6360	209 30 45.01	03904	209 45 20.36	03915	209 59 55.93	03925	210 14 31.72	03936	210 29 7.72	03947
6400	210 43 43.95	03958	210 58 20.41	03970	211 12 57.10	03981	211 27 34.02	03993	211 42 11.17	04004
6440	211 56 48.56	04016	212 11 26.18	04028	212 26 4.04	04039	212 40 42.13	04051	212 55 20.47	04063
6480	213 9 59.04	04075	213 24 37.86	04087	213 39 16.93	04099	213 53 56.24	04112	214 8 35.80	04124
6520	214 23 15.62	04136	214 37 55.69	04149	214 52 36.01	04161	215 7 16.58	04174	215 21 57.42	04187
6560	215 36 38.51	04199	215 51 19.86	04212	216 6 1.48	04225	216 20 43.36	04239	216 35 25.51	04252

In the logarithm of the daily motion the characteristic 2 must be supplied.

Heliocentric longitude.

TABLE XXXV.—True anomaly + Reduction to the Ecliptic—Continued.

[The Argument of this Table is the Fundamental Argument.]

Arg.	d. o	Log. D. M.	d. 8	Log. D. M.	d. 16	Log. D. M.	d. 24	Log. D. M.	d. 32	Log. D. M.
d.	° / "		° / "		° / "		° / "		° / "	
6600	216 50 7.93	04265	217 4 50.61	04278	217 19 33.57	04292	217 34 16.80	04305	217 49 0.30	04319
6640	218 3 44.08	04332	218 18 28.14	04346	218 33 12.48	04360	218 47 57.09	04374	219 2 42.00	04388
6680	219 17 27.19	04402	219 32 12.66	04416	219 46 58.42	04430	220 1 44.47	04444	220 16 30.82	04458
6720	220 31 17.45	04473	220 46 4.38	04487	221 0 51.61	04502	221 15 39.13	04516	221 30 26.96	04531
6760	221 45 15.08	04546	222 0 3.51	04561	222 14 52.25	04576	222 29 41.29	04591	222 44 30.63	04606
6800	222 59 20.29	04621	223 14 10.26	04636	223 29 0.54	04651	223 43 51.14	04667	223 58 42.05	04682
6840	224 13 33.28	04698	224 28 24.83	04713	224 43 16.69	04729	224 58 8.89	04745	225 13 1.40	04761
6880	225 27 54.25	04776	225 42 47.42	04792	225 57 40.91	04808	226 12 34.74	04824	226 27 28.90	04841
6920	226 42 23.39	04857	226 57 18.22	04873	227 12 13.39	04890	227 27 8.89	04906	227 42 4.74	04923
6960	227 57 0.92	04939	228 11 57.45	04956	228 26 54.33	04972	228 41 51.55	04989	228 56 49.11	05006
7000	229 11 47.03	05023	229 26 45.29	05040	229 41 43.91	05057	229 56 42.89	05074	230 11 42.22	05091
7040	230 26 41.90	05109	230 41 41.95	05126	230 56 42.35	05143	231 11 43.12	05161	231 26 44.24	05178
7080	231 41 45.74	05196	231 56 47.60	05214	232 11 49.82	05231	232 26 52.42	05249	232 41 55.38	05267
7120	232 56 58.72	05285	233 12 2.43	05303	233 27 6.52	05321	233 42 10.98	05339	233 57 15.82	05357
7160	234 12 21.04	05376	234 27 26.64	05394	234 42 32.63	05412	234 57 38.99	05431	235 12 45.74	05449
7200	235 27 52.88	05467	235 43 0.40	05486	235 58 8.32	05505	236 13 16.62	05524	236 28 25.32	05542
7240	236 43 34.41	05561	236 58 43.90	05580	237 13 53.79	05599	237 29 4.07	05618	237 44 14.75	05637
7280	237 59 25.82	05656	238 14 37.30	05675	238 29 49.19	05695	238 45 1.48	05714	239 0 14.18	05733
7320	239 15 27.88	05753	239 30 40.80	05772	239 45 54.72	05792	240 1 9.06	05811	240 16 23.80	05831
7360	240 31 38.96	05850	240 46 54.54	05870	241 2 10.53	05890	241 17 26.94	05910	241 32 43.77	05930
7400	241 48 1.03	05950	242 3 18.70	05970	242 18 36.80	05990	242 33 55.32	06010	242 49 14.27	06030
7440	243 4 33.64	06050	243 19 53.44	06070	243 35 13.67	06091	243 50 34.33	06111	244 5 55.43	06132
7480	244 21 16.96	06152	244 36 38.93	06173	244 52 1.33	06193	245 7 24.16	06214	245 22 47.44	06234
7520	245 38 11.15	06255	245 53 35.30	06276	246 8 59.89	06297	246 24 24.93	06317	246 39 50.42	06338
7560	246 55 16.35	06359	247 10 42.73	06380	247 26 9.55	06401	247 41 36.82	06422	247 57 4.55	06443
7600	248 12 32.72	06464	248 28 1.34	06486	248 43 30.42	06507	248 58 59.95	06528	249 14 29.94	06549
7640	249 30 0.39	06571	249 45 31.29	06592	250 1 2.66	06614	250 16 34.48	06635	250 32 6.76	06656
7680	250 47 39.51	06678	251 3 12.71	06700	251 18 46.39	06721	251 34 20.53	06743	251 49 55.13	06765
7720	252 5 30.20	06786	252 21 5.74	06808	252 36 41.75	06830	252 52 18.23	06852	253 7 55.18	06874
7760	253 23 32.61	06896	253 39 10.51	06917	253 54 48.88	06939	254 10 27.72	06961	254 26 7.05	06984
7800	254 41 46.85	07006	254 57 27.12	07028	255 13 7.88	07050	255 28 49.12	07072	255 44 30.83	07094
7840	256 0 13.03	07116	256 15 55.71	07139	256 31 38.88	07161	256 47 22.53	07183	257 3 6.66	07205
7880	257 18 51.28	07228	257 34 36.39	07250	257 50 21.99	07273	258 6 8.07	07295	258 21 54.64	07318
7920	258 37 41.71	07340	258 53 29.26	07363	259 9 17.31	07385	259 25 5.85	07408	259 40 54.88	07430
7960	259 56 44.41	07453	260 12 34.43	07476	260 28 24.95	07498	260 44 15.96	07521	261 0 7.47	07544
8000	261 15 59.48	07566	261 31 51.99	07589	261 47 44.99	07612	262 3 38.50	07635	262 19 32.50	07658
8040	262 35 27.01	07680	262 51 22.02	07703	263 7 17.54	07726	263 23 13.55	07749	263 39 10.07	07772
8080	263 55 7.10	07795	264 11 4.62	07818	264 27 2.66	07840	264 43 1.20	07863	264 59 0.25	07886
8120	265 14 59.80	07909	265 30 59.87	07932	265 47 0.44	07955	266 3 1.52	07978	266 19 3.11	08001
8160	266 35 5.21	08025	266 51 7.82	08048	267 7 10.94	08071	267 23 14.58	08094	267 39 18.72	08117
8200	267 55 23.38	08140	268 11 28.55	08163	268 27 34.23	08186	268 43 40.43	08209	268 59 47.14	08232
8240	269 15 54.37	08255	269 32 2.11	08278	269 48 10.37	08302	270 4 19.14	08325	270 20 28.43	08348
8280	270 36 38.23	08371	270 52 48.56	08394	271 8 59.40	08417	271 25 10.75	08440	271 41 22.63	08464
8320	271 57 35.02	08487	272 13 47.93	08510	272 30 1.36	08533	272 46 15.30	08556	273 2 29.77	08579
8360	273 18 44.76	08602	273 35 0.26	08625	273 51 16.28	08648	274 7 32.83	08672	274 23 49.89	08695
8400	274 40 7.48	08718	274 56 25.59	08741	275 12 44.21	08764	275 29 3.36	08787	275 45 23.02	08810
8440	276 1 43.21	08833	276 18 3.92	08856	276 34 25.15	08879	276 50 46.90	08903	277 7 9.17	08926
8480	277 23 31.96	08949	277 39 55.28	08972	277 56 19.11	08995	278 12 43.47	09018	278 29 8.34	09041
8520	278 45 33.74	09064	279 1 59.66	09087	279 18 26.10	09109	279 34 53.06	09132	279 51 20.55	09155
8560	280 7 48.55	09178	280 24 17.07	09201	280 40 46.12	09224	280 57 15.69	09247	281 13 45.77	09270
8600	281 30 16.38	09292	281 46 47.50	09315	282 3 19.15	09338	282 19 51.31	09361	282 36 24.00	09383
8640	282 52 57.20	09406	283 9 30.92	09429	283 26 5.17	09451	283 42 39.93	09474	283 59 15.20	09497
8680	284 15 51.00	09519	284 32 27.31	09542	284 49 4.14	09564	285 5 41.49	09587	285 22 19.36	09609
8720	285 38 57.74	09632	285 55 36.63	09654	286 12 16.05	09677	286 28 55.97	09699	286 45 36.41	09721
8760	287 2 17.37	09744	287 18 58.84	09766	287 35 40.82	09788	287 52 23.31	09810	288 9 6.32	09832

In the logarithm of the daily motion the characteristic 2 must be supplied.

Heliocentric longitude.

TABLE XXXV.—True anomaly + Reduction to the Ecliptic—Continued.

[The Argument of this Table is the Fundamental Argument.]

Arg.	d. o	Log. D. M.	d. 8	Log. D. M.	d. 16	Log. D. M.	d. 24	Log. D. M.	d. 32	Log. D. M.
d.	° / "		° / "		° / "		° / "		° / "	
8800	288 25 49.84	09855	288 42 33.87	09877	288 59 18.41	09899	289 16 3.47	09921	289 32 49.03	09943
8840	289 49 35.10	09965	290 6 21.67	09987	290 23 8.76	10009	290 39 56.36	10030	290 56 44.46	10052
8880	291 13 33.06	10074	291 30 22.18	10096	291 47 11.79	10117	292 4 1.91	10139	292 20 52.53	10161
8920	292 37 43.66	10182	292 54 35.29	10204	293 11 27.41	10225	293 28 20.04	10247	293 45 13.17	10268
8960	294 2 6.80	10289	294 19 0.92	10311	294 35 55.55	10332	294 52 50.67	10353	295 9 46.28	10374
9000	295 26 42.39	10395	295 43 38.99	10417	296 0 36.08	10438	296 17 33.67	10458	296 34 31.74	10479
9040	296 51 30.31	10500	297 8 29.37	10521	297 25 28.91	10542	297 42 28.94	10563	297 59 29.46	10583
9080	298 16 30.46	10604	298 33 31.95	10624	298 50 33.92	10645	299 7 36.37	10665	299 24 39.30	10686
9120	299 41 42.71	10706	299 58 46.60	10726	300 15 50.97	10747	300 32 55.81	10767	300 50 1.13	10787
9160	301 7 6.93	10807	301 24 13.19	10827	301 41 19.93	10847	301 58 27.14	10867	302 15 34.81	10886
9200	302 32 42.06	10906	302 49 51.56	10926	303 7 0.64	10945	303 24 10.18	10965	303 41 20.18	10985
9240	303 58 30.65	11004	304 15 41.58	11023	304 32 52.96	11043	304 50 4.80	11062	305 7 17.09	11081
9280	305 24 29.84	11100	305 41 43.05	11119	305 58 56.70	11138	306 16 10.81	11157	306 33 25.37	11176
9320	306 50 40.37	11194	307 7 55.82	11213	307 25 11.71	11232	307 42 28.05	11250	307 59 44.83	11269
9360	308 17 2.04	11287	308 34 19.70	11305	308 51 37.79	11324	309 8 56.32	11342	309 26 15.28	11359
9400	309 43 34.67	11378	310 0 54.50	11396	310 18 14.75	11414	310 35 35.43	11431	310 52 56.53	11449
9440	311 10 18.06	11467	311 27 40.01	11484	311 45 2.38	11502	312 2 25.17	11519	312 19 48.37	11537
9480	312 37 11.99	11554	312 54 36.02	11571	313 12 0.47	11588	313 29 25.32	11605	313 46 50.58	11622
9520	314 4 16.25	11639	314 21 42.33	11655	314 39 8.80	11672	314 56 35.67	11689	315 14 2.95	11705
9560	315 31 30.62	11722	315 48 58.68	11738	316 6 27.14	11754	316 23 55.99	11770	316 41 25.22	11786
9600	316 58 54.85	11802	317 16 24.85	11818	317 33 55.24	11834	317 51 26.01	11849	318 8 57.17	11865
9640	318 26 28.70	11881	318 44 0.60	11896	319 1 32.87	11911	319 19 5.52	11927	319 36 38.53	11942
9680	319 54 11.91	11957	320 11 45.65	11972	320 29 19.76	11987	320 46 54.23	12002	321 4 29.05	12016
9720	321 22 4.23	12031	321 39 39.76	12045	321 57 15.65	12060	322 14 51.88	12074	322 32 28.46	12088
9760	322 50 5.38	12102	323 7 42.65	12116	323 25 20.26	12130	323 42 58.20	12144	324 0 36.48	12158
9800	324 18 15.10	12172	324 35 54.04	12185	324 53 33.32	12198	325 11 12.91	12212	325 28 52.84	12225
9840	325 46 33.08	12238	326 4 13.64	12251	326 21 54.52	12264	326 39 35.72	12277	326 57 17.22	12290
9880	327 14 59.04	12302	327 32 41.16	12315	327 50 23.59	12327	328 8 6.32	12339	328 25 49.35	12352
9920	328 43 32.68	12364	329 1 16.30	12376	329 19 0.21	12387	329 36 44.42	12399	329 54 28.91	12411
9960	330 12 13.68	12422	330 29 58.74	12434	330 47 44.08	12445	331 5 29.69	12456	331 23 15.58	12468
10000	331 41 1.74	12479	331 58 48.17	12490	332 16 34.87	12500	332 34 21.83	12511	332 52 9.05	12522
10040	333 9 56.53	12532	333 27 44.27	12543	333 45 32.26	12553	334 3 20.50	12563	334 21 8.99	12573
10080	334 38 57.73	12583	334 56 46.71	12593	335 14 35.93	12602	335 32 25.38	12612	335 50 15.07	12621
10120	336 8 5.00	12631	336 25 55.15	12640	336 43 45.53	12649	337 1 36.13	12658	337 19 26.95	12667
10160	337 37 18.00	12676	337 55 9.25	12685	338 13 0.72	12693	338 30 52.40	12702	338 48 44.29	12710
10200	339 6 36.38	12718	339 24 28.67	12726	339 42 21.16	12734	340 0 13.85	12742	340 18 6.73	12750
10240	340 35 59.80	12758	340 53 53.06	12765	341 11 46.50	12772	341 29 40.12	12780	341 47 33.93	12787
10280	342 5 27.90	12794	342 23 22.05	12801	342 41 16.37	12808	342 59 10.86	12814	343 17 5.51	12821
10320	343 35 0.33	12827	343 52 55.30	12834	344 10 50.42	12840	344 28 45.70	12846	344 46 41.13	12852
10360	345 4 36.71	12858	345 22 32.43	12864	345 40 28.29	12869	345 58 24.29	12875	346 16 20.42	12880
10400	346 34 16.68	12885	346 52 13.08	12891	347 10 9.60	12896	347 28 6.24	12901	347 46 3.00	12905
10440	348 3 59.88	12910	348 21 56.88	12914	348 39 53.98	12919	348 57 51.19	12923	349 15 48.51	12927
10480	349 33 45.93	12931	349 51 43.45	12935	350 9 41.06	12939	350 27 38.77	12943	350 45 36.57	12946
10520	351 3 34.45	12950	351 21 32.42	12953	351 39 30.47	12956	351 57 28.60	12959	352 15 26.80	12962
10560	352 33 25.07	12965	352 51 23.41	12968	353 9 21.82	12970	353 27 20.28	12973	353 45 18.81	12975
10600	354 3 17.40	12977	354 21 16.04	12980	354 39 14.73	12982	354 57 13.46	12983	355 15 12.24	12985
10640	355 33 11.07	12987	355 51 9.93	12988	356 9 8.82	12989	356 27 7.75	12991	356 45 6.70	12992
10680	357 3 5.69	12993	357 21 4.69	12994	357 39 3.71	12994	357 57 2.76	12995	358 15 1.81	12995
10720	358 33 0.88	12996	358 50 59.95	12996	359 8 59.03	12996	359 26 58.10	12996	359 44 57.18	12996
10760	0 2 56.25	12996	0 20 55.32	12995	0 38 54.37	12995	0 56 53.41	12994	1 14 52.43	12994

In the logarithm of the daily motion the characteristic 2 must be supplied.

Inequalities of the logarithm of the radius vector.

TABLE XXXVI.

Arg. I.	Equation.	Arg. I.	Equation.
d.		d.	
0	0	5600	256
160	91	5760	223
320	179	5920	192
480	264	6080	164
640	345	6240	137
	75		23
800	420	6400	114
960	488	6560	94
1120	549	6720	76
1280	603	6880	62
1440	649	7040	51
	38		8
1600	687	7200	43
1760	717	7360	38
1920	741	7520	36
2080	757	7680	36
2240	767	7840	39
	+5		+6
2400	772	8000	45
2560	771	8160	53
2720	766	8320	64
2880	756	8480	78
3040	743	8640	94
	17		19
3200	726	8800	113
3360	706	8960	134
3520	683	9120	158
3680	659	9280	184
3840	631	9440	212
	29		30
4000	602	9600	242
4160	571	9760	274
4320	539	9920	306
4480	505	10080	337
4640	470	10240	368
	36		30
4800	434	10400	398
4960	398	10560	425
5120	362	10720	448
5280	326	10880	466
5440	290	11040	480
	-34		+14

TABLE XXXVII.

Year.	Equation.	Year.	Equation.	Arg. II.	Equation.	Arg. II.	Equation.
-240	+.00023	660	+.00023	d.		d.	
220	.00023	680	.00023	0	2323	52800	1986
200	.00022	700	.00023	960	2327	53760	1969
180	.00021	720	.00022	1920	2332	54720	1951
160	.00019	740	.00020	2880	2337	55680	1932
				3840	2342	56640	1912
140	.00017	760	.00019		6		22
120	.00016	780	.00018	4800	2348	57600	1890
100	.00014	800	.00017	5760	2353	58560	1868
80	.00012	820	.00015	6720	2359	59520	1845
60	.00010	840	.00013	7680	2364	60480	1822
				8640	2369	61440	1798
40	.00008	860	.00011		5		24
20	.00006	880	.00010	9600	2374	62400	1774
0	.00005	900	.00009	10560	2377	63360	1751
				11520	2381	64320	1727
20	.00004	920	.00007	12480	2383	65280	1704
40	.00002	940	.00006	13440	2383	66240	1681
					0		22
60	.00001	960	.00004	14400	2383	67200	1659
80	.00000	980	.00003	15360	2381	68160	1637
100	.00000	1000	.00003	16320	2377	69120	1616
120	.00000	1020	.00002	17280	2372	70080	1596
140	.00001	1040	.00001	18240	2366	71040	1577
160	.00001	1060	.00000		7		18
180	.00000	1080	.00000	19200	2359	72000	1559
200	.00000	1100	.00001	20160	2351	72960	1541
220	+.00001	1120	.00001	21120	2342	73920	1525
240	.00002	1140	.00001	22080	2331	74880	1509
				23040	2320	75840	1493
260	.00003	1160	.00001		12		15
280	.00004	1180	.00002	24000	2308	76800	1478
300	.00006	1200	.00003	24960	2295	77760	1464
320	.00008	1220	.00004	25920	2281	78720	1449
340	.00009	1240	.00005	26880	2267	79680	1435
				27840	2254	80640	1420
360	.00010	1260	.00006		14		15
380	.00011	1280	.00008	28800	2240	81600	1405
400	.00013	1300	.00010	29760	2227	82560	1390
420	.00015	1320	.00011	30720	2214	83520	1374
440	.00016	1340	.00012	31680	2202	84480	1358
				32640	2190	85440	1341
460	.00017	1360	.00014		12		18
480	.00019	1380	.00016	33600	2178	86400	1323
500	.00020	1400	.00017	34560	2168	87360	1303
520	.00022	1420	.00018	35520	2158	88320	1283
540	.00022	1440	.00019	36480	2148	89280	1262
				37440	2139	90240	1240
560	.00022	1460	.00021		8		23
580	.00023	1480	.00022	38400	2131	91200	1217
600	.00024	1500	.00023	39360	2123	92160	1193
620	.00024	1520	.00023	40320	2116	93120	1168
640	.00024	1540	.00023	41280	2109	94080	1143
				42240	2102	95040	1117
660	+.00023	1560	+.00023		7		26
				43200	2095	96000	1091
				44160	2088	96960	1065
				45120	2080	97920	1038
				46080	2071	98880	1012
				47040	2062	99840	986
					10		26
				48000	2052	100800	960
				48960	2041	101760	936
				49920	2029	102720	912
				50880	2016	103680	888
				51840	2001	104640	866
					15		22
				52800	1986	105600	845

Inequalities of the Logarithm of the Radius Vector.

TABLE XXXVII.

Arg. II.	Equation.	Arg. II.	Equation.	Arg. II.	Equation.
d.		d.		d.	
105600	845 -20	158400	143 -4	211200	289 +10
106560	825 19	159360	139 5	212160	299 11
107520	806 18	160320	134 5	213120	310 12
108480	788 17	161280	129 6	214080	322 14
109440	771 16	162240	123 7	215040	336 15
110400	755 15	163200	116 7	216000	351 16
111360	740 14	164160	109 7	216960	367 18
112320	726 13	165120	102 8	217920	385 18
113280	713 13	166080	94 8	218880	403 20
114240	700 13	167040	86 8	219840	423 +21
115200	687 13	168000	78 8	220800	444
116160	674 12	168960	70 8		
117120	662 12	169920	62 8	Year.	Equation.
118080	649 13	170880	55 7		
119040	636 13	171840	48 5	2140	+ .00004
120000	623 13	172800	43 5	2160	.00005
120960	610 13	173760	38 5	2180	.00006
121920	595 15	174720	34 4	2200	.00008
122880	581 14	175680	32 1	2220	.00009
123840	565 17	176640	31 1	2240	.00010
124800	548 17	177600	30 +2	2260	.00012
125760	531 18	178560	32 2	2280	.00013
126720	513 19	179520	34 4	2300	+ .00015
127680	494 19	180480	38 4		
128640	475 19	181440	43 6		
129600	456 20	182400	49 7		
130560	436 21	183360	56 9		
131520	415 20	184320	65 10		
132480	395 20	185280	75 10		
133440	375 20	186240	85 10		
134400	355 19	187200	95 11		
135360	336 19	188160	106 11		
136320	317 18	189120	117 11		
137280	299 17	190080	128 11		
138240	282 16	191040	139 10		
139200	266 15	192000	149 10		
140160	251 14	192960	159 10		
141120	237 12	193920	169 10		
142080	225 11	194880	179 9		
143040	214 10	195840	188 8		
144000	204 9	196800	196 7		
144960	195 7	197760	203 7		
145920	188 7	198720	210 7		
146880	181 5	199680	216 6		
147840	176 5	200640	222 5		
148800	171 4	201600	227 5		
149760	167 3	202560	232 5		
150720	164 2	203520	237 5		
151680	162 2	204480	242 5		
152640	160 2	205440	247 5		
153600	158 2	206400	252 6		
154560	156 3	207360	258 7		
155520	153 3	208320	265 7		
156480	150 3	209280	272 8		
157440	147 4	210240	280 +9		
158400	143	211200	289		

TABLE XXXVIII.

Arg. III.	Equation.	Arg. III.	Equation.
d.		d.	
0	12664 +150	4480	4434 -289
80	12814 140	4560	4145 284
160	12954 128	4640	3861 278
240	13082 117	4720	3583 271
320	13199 105	4800	3312 264
400	13304 94	4880	3048 256
480	13398 81	4960	2792 248
560	13479 68	5040	2544 239
640	13547 56	5120	2305 230
720	13603 44	5200	2075 219
800	13647 30	5280	1856 210
880	13677 17	5360	1646 198
960	13694 4	5440	1448 186
1040	13698 +8	5520	1262 175
1120	13690 23	5600	1087 163
1200	13667 35	5680	924 150
1280	13632 49	5760	774 137
1360	13583 61	5840	637 124
1440	13522 75	5920	513 110
1520	13447 88	6000	403 96
1600	13359 100	6080	307 82
1680	13259 113	6160	225 68
1760	13146 126	6240	157 53
1840	13020 138	6320	104 38
1920	12882 150	6400	66 23
2000	12732 161	6480	43 7
2080	12571 173	6560	36 +7
2160	12398 184	6640	43 22
2240	12214 195	6720	65 38
2320	12019 205	6800	103 53
2400	11814 215	6880	156 68
2480	11599 225	6960	224 83
2560	11374 234	7040	307 98
2640	11140 243	7120	405 113
2720	10897 251	7200	518 127
2800	10646 259	7280	645 143
2880	10387 266	7360	788 156
2960	10121 273	7440	944 171
3040	9848 280	7520	1115 184
3120	9568 285	7600	1299 198
3200	9283 290	7680	1497 210
3280	8993 295	7760	1707 224
3360	8698 298	7840	1931 236
3440	8400 303	7920	2167 247
3520	8097 305	8000	2414 259
3600	7792 307	8080	2673 271
3680	7485 308	8160	2944 280
3760	7177 310	8240	3224 291
3840	6867 310	8320	3515 300
3920	6557 309	8400	3815 310
4000	6248 308	8480	4125 317
4080	5940 308	8560	4442 326
4160	5632 304	8640	4768 332
4240	5328 302	8720	5100 340
4320	5026 298	8800	5440 345
4400	4728 294	8880	5785 +351
4480	4434	8960	6136

Inequalities of the Logarithm of the Radius Vector.

TABLE XXXVIII—Continued.

Arg. III.	Equation.	Arg. III.	Equation.	Arg. III.	Equation.
d.		d.		d.	
8960	6136 + 355	13440	16627 - 167	17920	3042 - 37
9040	6491 + 360	13520	16460 - 179	18000	3005 - 22
9120	6851 + 363	13600	16281 - 192	18080	2983 - 9
9200	7214 + 365	13680	16089 - 203	18160	2974 + 4
9280	7579 + 368	13760	15886 - 215	18240	2978 + 19
9360	7947 + 369	13840	15671 - 226	18320	2997 + 32
9440	8316 + 371	13920	15445 - 236	18400	3029 + 45
9520	8687 + 370	14000	15209 - 246	18480	3074 + 58
9600	9057 + 369	14080	14963 - 255	18560	3132 + 72
9680	9426 + 369	14160	14708 - 264	18640	3204 + 84
9760	9795 + 366	14240	14444 - 273	18720	3288 + 97
9840	10161 + 364	14320	14171 - 281	18800	3385 + 109
9920	10525 + 361	14400	13890 - 287	18880	3494 + 120
10000	10886 + 357	14480	13603 - 294	18960	3614 + 133
10080	11243 + 352	14560	13309 - 301	19040	3747 + 144
10160	11595 + 348	14640	13008 - 305	19120	3891 + 154
10240	11943 + 342	14720	12703 - 311	19200	4045 + 165
10320	12285 + 335	14800	12392 - 314	19280	4210 + 175
10400	12620 + 328	14880	12078 - 318	19360	4385 + 185
10480	12948 + 321	14960	11760 - 322	19440	4570 + 193
10560	13269 + 313	15040	11438 - 323	19520	4763 + 203
10640	13582 + 304	15120	11115 - 325	19600	4966 + 210
10720	13886 + 296	15200	10790 - 326	19680	5176 + 218
10800	14182 + 285	15280	10464 - 326	19760	5394 + 225
10880	14467 + 276	15360	10138 - 325	19840	5619 + 231
10960	14743 + 264	15440	9813 - 325	19920	5850 + 238
11040	15007 + 254	15520	9488 - 323	20000	6088 + 242
11120	15261 + 243	15600	9165 - 320	20080	6330 + 247
11200	15504 + 230	15680	8845 - 318	20160	6577 + 252
11280	15734 + 217	15760	8527 - 314	20240	6829 + 255
11360	15951 + 206	15840	8213 - 310	20320	7084 + 258
11440	16157 + 192	15920	7903 - 305	20400	7342 + 260
11520	16349 + 179	16000	7598 - 299	20480	7602 + 262
11600	16528 + 165	16080	7299 - 294	20560	7864 + 263
11680	16693 + 152	16160	7005 - 286	20640	8127 + 263
11760	16845 + 137	16240	6719 - 280	20720	8390 + 264
11840	16982 + 123	16320	6439 - 272	20800	8654 + 262
11920	17105 + 108	16400	6167 - 263	20880	8916 + 261
12000	17213 + 94	16480	5904 - 255	20960	9177 + 258
12080	17307 + 79	16560	5649 - 246	21040	9435 + 256
12160	17386 + 64	16640	5403 - 236	21120	9691 + 253
12240	17450 + 49	16720	5167 - 226	21200	9944 + 249
12320	17499 + 34	16800	4941 - 215	21280	10193 + 244
12400	17533 + 18	16880	4726 - 204	21360	10437 + 239
12480	17551 + 4	16960	4522 - 193	21440	10676 + 234
12560	17555 - 12	17040	4329 - 181	21520	10910 + 228
12640	17543 - 26	17120	4148 - 169	21600	11138 + 220
12720	17517 - 42	17200	3979 - 156	21680	11358 + 214
12800	17475 - 55	17280	3823 - 144	21760	11572 + 205
12880	17420 - 71	17360	3679 - 131	21840	11777 + 198
12960	17349 - 86	17440	3548 - 118	21920	11975 + 189
13040	17263 - 99	17520	3430 - 105	22000	12164 + 179
13120	17164 - 114	17600	3325 - 91	22080	12343 + 170
13200	17050 - 127	17680	3234 - 78	22160	12513 + 160
13280	16923 - 141	17760	3156 - 64	22240	12673 + 150
13360	16782 - 155	17840	3092 - 50	22320	12823 + 139
13440	16627 - 155	17920	3042 - 50	22400	12962 + 139

TABLE XXXIX.

Arg. IV.	Equation.	Arg. IV.	Equation.
d.		d.	
0	491 - 46	2440	2372 + 114
40	445 - 43	2480	2486 + 117
80	402 - 41	2520	2603 + 119
120	361 - 39	2560	2722 + 122
160	322 - 36	2600	2844 + 124
200	286 - 33	2640	2968 + 127
240	253 - 31	2680	3095 + 129
280	222 - 28	2720	3224 + 131
320	194 - 26	2760	3355 + 133
360	168 - 23	2800	3488 + 136
400	145 - 21	2840	3624 + 137
440	124 - 18	2880	3761 + 139
480	106 - 16	2920	3900 + 141
520	90 - 14	2960	4041 + 142
560	76 - 11	3000	4183 + 144
600	65 - 8	3040	4327 + 146
640	57 - 6	3080	4473 + 146
680	51 - 4	3120	4619 + 147
720	47 - 1	3160	4766 + 149
760	46 + 2	3200	4915 + 148
800	48	3240	5063 + 149
840	52 - 4	3280	5212 + 149
880	58 - 6	3320	5361 + 149
920	67 - 9	3360	5510 + 148
960	79 - 12	3400	5658 + 148
1000	93 - 16	3440	5806 + 146
1040	109 - 19	3480	5952 + 145
1080	128 - 21	3520	6097 + 143
1120	149 - 25	3560	6240 + 141
1160	174 - 27	3600	6381 + 138
1200	201 - 30	3640	6519 + 135
1240	231 - 31	3680	6654 + 131
1280	262 - 35	3720	6785 + 128
1320	297 - 37	3760	6913 + 122
1360	334 - 40	3800	7035 + 117
1400	374 - 43	3840	7152 + 112
1440	417 - 45	3880	7264 + 105
1480	462 - 47	3920	7369 + 98
1520	509 - 51	3960	7467 + 90
1560	560 - 53	4000	7557 + 82
1600	613 - 56	4040	7639 + 74
1640	669 - 59	4080	7713 + 64
1680	728 - 61	4120	7777 + 54
1720	789 - 65	4160	7831 + 44
1760	854 - 67	4200	7875 + 33
1800	921 - 69	4240	7908 + 22
1840	990 - 73	4280	7930 + 11
1880	1063 - 75	4320	7941 + 0
1920	1138 - 78	4360	7941 - 10
1960	1216 - 81	4400	7931 - 22
2000	1297 - 84	4440	7909 - 33
2040	1381 - 87	4480	7876 - 43
2080	1468 - 89	4520	7833 - 52
2120	1557 - 92	4560	7781 - 63
2160	1649 - 95	4600	7718 - 71
2200	1744 - 98	4640	7647 - 79
2240	1842 - 101	4680	7568 - 88
2280	1943 - 103	4720	7480 - 94
2320	2046 - 106	4760	7386 - 102
2360	2152 - 109	4800	7284 - 107
2400	2261 + 111	4840	7177 - 113

Inequalities of the Logarithm of the Radius Vector.

TABLE XXXIX—Cont'd.

TABLE XL.

TABLE XLI.

TABLE XLII.

Arg. IV.	Equa.	Arg. V.	Equa.	Arg. V.	Equa.	Arg. VI.	Equa.	Arg. VI.	Equa.	Arg. VII.	Equa.
d.		d.		d.		d.		d.		d.	
4880	7064 -119	0	362 +18	17600	132 +23	0	843 -17	4400	713 +31	0	37 -10
4920	6945 123	320	380 17	17920	155 23	80	826 21	4480	744 28	160	27 8
4960	6822 126	640	397 16	18240	178 24	160	805 24	4560	772 25	320	19 7
5000	6696 130	960	413 14	18560	202 23	240	781 27	4640	797 22	480	12 4
5040	6566 133	1280	427 13	18880	225 24	320	754 29	4720	819 18	640	8 3
5080	6433 136	1600	440 11	19200	249 23	400	725 32	4800	837 15	800	5 -1
5120	6297 138	1920	451 9	19520	272 23	480	693 33	4880	852 11	960	4 +1
5160	6159 140	2240	460 8	19840	295 22	560	660 35	4960	863 7	1120	5 3
5200	6019 141	2560	468 6	20160	317 21	640	625 37	5040	870 +4	1280	8 5
5240	5878 143	2880	474 5	20480	338 20	720	588 37	5120	874 -1	1440	13 6
5280	5735 143	3200	479 3	20800	358 18	800	551 38	5200	873 5	1600	19 8
5320	5592 144	3520	482 +1	21120	376 +18	880	513 38	5280	868 8	1760	27 10
5360	5448 144	3840	483 0	21440	394 +18	960	475 38	5360	860 12	1920	37 12
5400	5304 145	4160	483 -2			1040	437 38	5440	848 16	2080	49 13
5440	5159 144	4480	481 3			1120	399 37	5520	832 20	2240	62 15
5480	5015 144	4800	478 5			1200	362 36	5600	812 -23	2400	77 15
5520	4871 143	5120	473 6			1280	326 34	5680	789 -23	2560	92 17
5560	4728 142	5440	467 9			1360	292 32			2720	109 18
5600	4586 142	5760	458 11			1440	259 30			2880	127 19
5640	4444 140	6080	449 11			1520	227 29			3040	146 19
5680	4304 139	6400	438 13			1600	198 28			3200	165 20
5720	4165 138	6720	425 15			1680	170 25			3360	185 21
5760	4027 137	7040	410 16			1760	145 24			3520	206 21
5800	3890 134	7360	394 17			1840	121 20			3680	227 20
5840	3756 133	7680	377 19			1920	101 18			3840	247 21
5880	3623 131	8000	358 21			2000	83 16			4000	268 21
5920	3492 129	8320	337 21			2080	67 13			4160	289 20
5960	3363 127	8640	316 23			2160	54 9			4320	309 19
6000	3236 125	8960	293 23			2240	45 7			4480	328 18
6040	3111 123	9280	270 24			2320	38 4			4640	347 19
6080	2988 120	9600	246 25			2400	34 -1			4800	365 17
6120	2868 119	9920	221 24			2480	33 +2			4960	382 16
6160	2749 116	10240	197 25			2560	35 +5			5120	398 15
6200	2633 113	10560	172 24			2640	40 9			5280	413 13
6240	2520 111	10880	148 23			2720	49 11			5440	426 12
6280	2409 109	11200	125 22			2800	60 15			5600	438 10
6320	2300 107	11520	103 20			2880	75 18			5760	448 9
6360	2193 104	11840	83 19			2960	93 20			5920	457 7
6400	2089 101	12160	64 17			3040	113 24			6080	464 5
6440	1988 99	12480	47 14			3120	137 27			6240	469 4
6480	1889 96	12800	33 12			3200	164 29			6400	473 +1
6520	1793 94	13120	21 10			3280	193 31			6560	474 0
6560	1699 91	13440	11 6			3360	224 34			6720	474 -2
6600	1608 88	13760	5 4			3440	258 35			6880	472 4
6640	1520 86	14080	1 -1			3520	293 38			7040	468 5
6680	1434 83	14400	0 +3			3600	331 38			7200	463 8
6720	1351 80	14720	3 5			3680	369 40			7360	455 9
6760	1271 78	15040	8 8			3760	409 40			7520	446 10
6800	1193 76	15360	16 10			3840	449 40			7680	436 13
6840	1117 72	15680	26 13			3920	489 40			7840	423 13
6880	1045 71	16000	39 15			4000	529 40			8000	410 15
6920	974 67	16320	54 17			4080	569 38			8160	395 16
6960	907 65	16640	71 19			4160	607 37			8320	379 17
7000	842 62	16960	90 20			4240	644 36			8480	362 18
7040	780 60	17280	110 +22			4320	680 +33			8640	344 -19
7080	720 57										
7120	663 54										
7160	609 53										
7200	556 49										
7240	507 47										
7280	460 44										
7320	416 42										
7360	374 42										

Inequalities of the Logarithm of the Radius Vector.

TABLE XLII—C't'd.

TABLE XLIII.

TABLE XLIV.

TABLE XLV.

TABLE XLVI.

TABLE XLVII.

Arg. VII.	Equa.
d.	
8800	325—20
8960	305 20
9120	285 21
9280	264 20
9440	244 21
9600	223 21
9760	202 20
9920	182 20
10080	162 20
10240	142 18
10400	124 18
10560	106 17
10720	89 15
10880	74 14
11040	60 13
11200	47 11
11360	36 10
11520	26 8
11680	18

Arg. VIII.	Equa.
d.	
0	106—20
320	86—8
640	78—8
960	83+5
1280	100 17
1600	127 27
1920	162 35
2240	201 39
2560	240 39
2880	277 37
3200	311 34
3520	337 26
3840	355 18
4160	365+10
4480	364—1
4800	354 10
5120	335 19
5440	309 26
5760	276 33
6080	239 37
6400	199 40
6720	159 40
7040	121 38
7360	86 35
7680	57 29
8000	33 24
8320	17 16
8640	8 9
8960	7—1
9280	14+7
9600	28 14
9920	48 20
10240	74 26
10560	105 31
10880	138 33
11200	174 36
11520	210 36
11840	245 35
12160	277 32
12480	305 28
12800	328 23
13120	344 16
13440	354+10
13760	354 0
14080	347—7
14400	330 17
14720	306 24
15040	275 31
15360	239 36
15680	200 39
16000	162 38
16320	128 34
16640	100 28
16960	83—17

Arg. IX.	Equa.
d.	
0	145—7
80	138—8
160	130 8
240	122 8
320	113 9
400	104 9
480	94 10
560	85 9
640	76 9
720	67 9
800	58 8
880	50 8
960	42 8
1040	35 7
1120	28 7
1200	21 7
1280	16 5
1360	11 5
1440	7 4
1520	4 3
1600	2—1
1680	1—0
1760	1—0
1840	2+1
1920	4 2
2000	6 6
2080	10 4
2160	15 5
2240	20 5
2320	27 7
2400	34 7
2480	41 7
2560	49 8
2640	58 9
2720	67 9
2800	76 9
2880	85 9
2960	95 10
3040	105 10
3120	114 9
3200	123 9
3280	132 8
3360	140 8
3440	147 7
3520	153 6
3600	159 6
3680	162 3
3760	165 3
3840	166+1
3920	166 0
4000	165—1
4080	162 3
4160	158 4
4240	152 6
4320	146 6
4400	139—7

Arg. X.	Equa.
d.	
0	184—9
320	175 10
640	165 13
960	152 14
1280	138 16
1600	122 16
1920	106 16
2240	90 16
2560	74 15
2880	59 15
3200	45 14
3520	33 12
3840	23 10
4160	15 8
4480	9 6
4800	7—2
5120	7—0
5440	11+4
5760	17 6
6080	25 8
6400	36 11
6720	49 13
7040	63 14
7360	78 15
7680	94 16
8000	111 17
8320	127 16
8640	142 15
8960	156 14
9280	168 12
9600	178 10
9920	185 7
10240	191 6
10560	193+2
10880	192—1
11200	189 3
11520	183 6
11840	174—9

Arg. XII.	Equa.
d.	
0	0+1
80	1+4
160	5 5
240	10 8
320	18 10
400	28 12
480	40 13
560	53 15
640	68 15
720	83 15
800	100 17
880	116 16
960	132 16
1040	148 16
1120	162 14
1200	175 13
1280	186 11
1360	195 9
1440	201 6
1520	204+3
1600	204—0
1680	202—2
1760	196 6
1840	188 8
1920	178 10
2000	166 12
2080	151 15
2160	136 15
2240	120 16
2320	103 17
2400	87 16
2480	71 15
2560	56 14
2640	42 12
2720	30 10
2800	20 8
2880	12 6
2960	6 4
3040	2—2
3120	0+1
3200	1

Arg. XIII.	Equa.
d.	
0	79+13
160	92+11
320	103 9
480	112 6
640	118 4
800	122+1
960	123—1
1120	122 5
1280	117 7
1440	110 9
1600	101 12
1760	89 12
1920	77 12
2080	63 14
2240	49 14
2400	36 13
2560	25 11
2720	15 10
2880	8 7
3040	5—3
3200	4+3
3360	7+6
3520	13 9
3680	22 12
3840	34 12
4000	46 14
4160	60 13
4320	73 13
4480	86 13
4640	98+12

Inequalities of the Logarithm of the Radius Vector.

TABLE XLVIII.

TABLE XLIX.

TABLE LII.

Arg. XIV.	Equa.	Arg. XV.	Equa.	A.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
					o	160	320	480	640	800	960	1120	1280	1440	1600	1760	1920	2080
d.		d.																
o	34	o	59 + 10	1	207	200	193	186	183	184	193	207	224	236	236	222	194	160
320	31	80	69 + 9	3	202	194	187	182	183	192	208	227	242	244	230	202	168	135
640	28	160	78	5	191	182	178	178	186	203	224	242	249	236	209	175	141	116
960	24	240	87	7	175	169	169	176	193	216	237	248	241	215	181	147	120	105
1280	21	320	95	9	157	155	162	179	204	228	243	241	220	187	153	125	109	103
1600	17	400	101	11	139	145	161	187	216	235	238	222	191	158	130	113	106	108
1920	13	480	106	13	126	141	168	199	224	233	221	195	162	135	117	110	111	118
2240	10	560	109	15	120	147	180	210	225	219	197	166	139	121	114	115	121	132
2560	7	640	111 + 1	17	124	160	193	215	214	197	170	143	125	118	119	125	135	145
2880	4	720	110 - 2	19	139	176	202	209	195	171	146	128	121	122	129	138	148	157
3200	2	800	108	21	158	189	201	193	171	148	130	123	125	132	142	152	161	165
3520	1	880	104	23	176	192	189	170	148	132	124	126	134	145	156	165	169	168
3840	0	960	98	25	184	184	168	147	131	124	126	135	146	158	169	174	174	168
4160	0	1040	91	27	179	165	145	129	122	125	134	147	160	171	179	180	175	166
4480	1	1120	83	29	162	142	125	118	121	132	146	161	173	182	185	182	173	163
4800	3	1200	74	31	139	121	114	117	128	143	161	175	184	189	187	180	171	161
5120	5	1280	64	33	116	108	111	123	140	158	175	187	192	192	186	178	169	162
5440	7	1360	54	35	102	104	117	135	155	173	187	194	195	191	183	175	169	166
5760	10	1440	43	37	97	109	129	150	171	186	195	197	194	186	179	173	171	172
6080	14	1520	34	39	102	122	144	166	184	195	198	194	188	180	174	171	174	180
6400	17	1600	25	41	114	138	161	180	192	197	194	187	180	172	168	170	177	188
6720	21	1680	16	43	130	154	174	188	194	192	185	175	168	163	162	169	179	193
7040	25	1760	10	45	146	168	182	189	187	181	171	161	155	153	156	166	179	193
7360	28	1840	5	47	160	176	183	182	175	164	152	143	140	141	148	161	175	189
7680	32	1920	2	49	168	176	176	168	156	143	132	125	125	129	139	152	166	179
8000	34	2000	0 + 1	51	168	169	161	148	134	120	110	107	110	117	129	142	154	167
8320	37	2080	1	53	162	154	141	125	109	97	90	90	95	105	117	130	142	153
8640	38	2160	4	55	148	134	118	101	85	76	73	76	83	96	106	119	130	140
8960	39	2240	8	57	130	112	94	77	64	58	59	65	74	86	97	109	119	128
9280	40	2320	14	59	110	91	72	58	48	47	51	58	68	80	91	102	111	118
9600	39	2400	21	61	91	72	55	44	40	42	47	56	66	78	89	98	105	111
9920	38	2480	30	63	75	59	45	38	38	42	49	58	68	79	89	97	102	106
10240	36	2560	40	65	65	52	43	40	43	48	56	65	74	83	91	97	101	104
10560	34	2640	50	67	62	53	48	49	53	59	66	74	81	88	95	99	102	104
10880	31	2720	60	69	66	60	59	62	66	73	79	85	90	94	99	101	104	106
		2800	70 + 9	71	76	74	75	78	82	87	91	95	97	100	102	104	106	110
		2880	79 + 9	73	92	92	93	95	98	101	102	103	104	104	105	107	110	115
				75	110	110	111	112	113	112	111	109	108	107	107	109	115	123
				77	128	128	128	126	124	120	116	113	111	108	109	113	121	132
				79	145	144	141	137	131	124	119	115	111	110	111	118	129	141
				81	159	155	149	143	134	126	120	115	111	112	116	125	137	151
				83	169	162	153	144	134	126	118	113	111	114	121	131	145	159
				85	174	164	153	142	131	122	116	112	113	118	127	139	153	165
				87	174	162	150	138	127	119	113	111	115	123	133	145	158	166
				89	171	158	145	133	122	115	111	112	119	128	139	150	159	161
				91	164	151	138	126	117	111	111	114	124	134	144	151	154	149
				93	156	143	130	120	112	109	112	118	129	138	146	148	143	132
				95	146	133	122	113	108	110	115	123	133	141	143	139	127	110
				97	136	124	114	109	108	113	120	129	136	140	137	126	109	88
				99	126	116	109	107	111	118	126	133	137	135	127	110	90	69
				101	117	110	108	110	117	125	133	137	136	128	115	96	75	56
				103	112	110	111	117	126	134	139	139	132	120	104	85	67	53
				105	112	114	119	128	137	142	144	139	128	114	98	82	69	63
				107	118	124	132	141	148	149	147	138	125	111	98	87	81	86
				109	130	138	147	155	158	156	149	138	126	114	106	102	106	118
				111	145	155	163	167	166	161	152	142	132	124	122	127	138	154
				113	163	172	177	177	166	156	148	143	141	146	158	173	184	184
				115	181	187	188	184	177	170	162	158	158	164	175	190	200	200
				117	195	197	194	188	181	174	170	172	179	190	205	215	214	199
				119	205	202	196	188	182	179	180	189	202	216	227	227	211	183
				1	207	200	193	186	183	184	193	207	224	236	236	222	194	160

The horizontal argument of this table is Arg. I.

TABLE L.

Arg. XVI.	Equa.
d.	d.
o - 27	1
28 - 172	0
173 - 216	1
217 - 361	2
362 - 405	1

TABLE LI.

Arg. XVII.	Equa.
d.	d.
o - 1	0
2 - 50	1
51 - 116	2
117 - 165	1
166 - 230	0
231 - 293	1

Inequalities of the Logarithm of the Radius Vector.

TABLE LII—Continued.

d. 2240	d. 2400	d. 2560	d. 2720	d. 2880	d. 3040	d. 3200	d. 3360	d. 3520	d. 3680	d. 3840	d. 4000	d. 4160	d. 4320	d. 4480	d. 4640	d. 4800	d. 4960	d. 5120	A.
129	107	96	96	104	119	137	155	170	178	181	177	168	156	143	132	125	122	125	1
111	99	97	104	117	134	151	165	173	174	169	159	145	131	119	111	108	109	116	3
101	98	104	116	131	146	160	168	168	162	150	136	120	106	97	93	94	100	110	5
100	104	115	129	143	155	163	162	155	143	126	109	95	85	80	81	86	95	106	7
105	114	128	142	152	158	158	150	136	120	101	85	74	69	70	75	83	93	102	9
116	127	140	151	156	155	147	133	114	96	79	66	61	61	67	74	84	92	98	11
129	140	150	155	154	147	131	113	93	75	63	56	56	61	69	77	85	90	93	13
142	151	156	154	146	132	114	93	75	62	55	54	59	67	75	82	86	88	87	15
154	158	156	148	135	117	97	79	65	58	57	61	69	77	84	88	88	85	81	17
161	160	152	139	122	103	85	71	64	63	68	76	84	91	94	93	89	82	75	19
164	157	145	129	111	94	80	74	73	78	86	95	102	104	103	97	89	80	71	21
162	152	137	120	104	92	85	86	91	100	109	116	119	117	111	101	90	80	71	23
159	146	131	117	106	101	101	107	116	126	134	137	135	128	118	105	92	82	75	25
155	142	129	120	116	118	124	134	145	153	158	156	149	138	124	110	96	87	81	27
152	141	134	131	134	141	153	163	173	179	178	172	160	145	129	114	102	94	91	29
152	147	145	149	159	170	182	192	199	200	194	182	167	150	133	118	108	102	103	31
157	157	162	172	185	198	209	217	219	215	204	188	171	153	135	122	114	112	116	33
166	172	183	196	210	223	231	235	232	223	208	190	170	152	136	125	121	122	129	35
178	189	203	218	231	242	246	245	237	223	206	186	166	148	135	127	126	132	142	37
191	205	220	234	245	252	252	246	234	218	198	177	158	143	132	129	132	141	153	39
202	217	231	243	251	253	250	239	225	206	185	165	147	135	129	130	138	150	162	41
208	222	235	244	249	247	240	226	209	189	168	150	136	128	127	133	144	157	167	43
208	221	231	238	238	233	222	207	189	168	149	135	125	123	127	137	150	161	166	45
202	214	221	224	222	214	201	185	166	147	131	122	118	121	131	143	155	161	159	47
191	201	206	206	201	192	177	161	143	128	117	113	116	124	137	149	157	157	145	49
177	184	188	186	179	168	154	138	124	113	108	111	119	132	145	154	156	147	127	51
162	167	168	165	157	145	133	120	110	105	107	116	128	142	153	157	150	133	106	53
147	150	150	145	137	126	117	108	104	106	114	127	142	154	160	156	140	115	86	55
133	135	133	128	121	113	107	104	105	114	128	142	156	164	162	149	126	97	72	57
122	122	121	116	111	107	104	108	116	129	145	159	169	170	159	138	111	85	69	59
114	114	112	109	106	107	110	119	132	148	164	175	178	170	151	125	99	81	79	61
108	108	107	107	109	114	123	136	152	169	180	185	180	164	139	113	94	90	103	63
106	107	108	111	117	127	141	156	173	186	192	189	176	153	127	108	102	113	136	65
106	109	113	120	131	144	160	176	190	198	196	185	165	141	120	112	122	146	174	67
110	115	122	133	147	162	179	193	202	202	192	174	151	131	121	130	153	183	209	69
116	124	134	148	164	180	194	203	205	197	181	159	138	128	135	158	190	219	236	71
124	135	148	163	180	194	203	206	200	185	164	143	131	136	159	193	225	246	252	73
134	147	162	177	192	202	205	200	187	167	146	132	134	156	191	227	252	262	257	75
145	160	175	188	198	202	198	186	167	145	130	130	149	184	223	252	266	264	251	77
156	171	184	193	197	193	182	164	142	126	123	139	173	214	247	265	266	255	238	79
165	178	187	191	187	176	159	137	119	113	126	158	200	237	259	263	253	237	219	81
172	180	184	180	169	152	130	110	101	111	140	181	221	247	255	247	232	214	197	83
173	176	172	162	144	123	101	89	94	120	160	201	230	241	237	222	204	188	174	85
168	164	153	136	114	91	76	77	99	137	178	210	225	222	209	191	175	162	153	87
156	145	127	105	82	64	61	78	113	155	188	206	206	193	176	160	147	138	135	89
137	120	98	74	55	47	60	91	131	166	186	188	177	160	143	131	123	120	122	91
114	93	69	48	37	45	71	109	145	166	170	160	144	128	114	107	105	108	115	93
89	66	44	32	35	57	91	126	149	155	145	129	112	100	93	91	96	104	115	95
66	44	30	30	47	78	111	135	142	133	117	101	88	81	80	85	95	108	121	97
48	33	31	44	71	102	125	132	125	109	92	79	72	72	78	89	103	119	134	99
41	36	47	70	98	120	129	121	105	86	73	66	67	74	86	101	118	135	149	101
48	55	75	100	121	128	121	104	85	71	64	64	72	85	102	120	138	153	165	103
69	85	108	126	133	125	108	88	72	65	65	73	87	105	124	143	159	171	179	105
101	120	137	142	133	114	93	76	67	68	75	90	108	129	148	165	178	186	189	107
136	151	154	144	123	101	82	72	72	79	94	113	133	153	170	183	191	194	192	109
167	168	157	135	110	90	78	76	83	97	116	137	157	174	187	195	197	194	188	111
184	171	147	120	98	84	81	87	100	119	140	160	177	189	195	197	194	187	179	113
185	160	131	105	90	85	90	103	121	141	161	177	189	194	195	191	183	174	166	115
172	141	114	96	89	92	104	122	142	160	177	187	191	190	184	176	166	157	151	117
151	122	102	93	94	104	120	140	159	173	183	187	184	177	166	155	146	138	136	119
129	107	96	96	104	119	137	155	170	178	181	177	168	156	143	132	125	122	125	1

The quantities tabulated are in units of the seventh decimal.

Inequalities of the Logarithm of the Radius Vector.

TABLE LII—Continued.

A.	d. 5280	d. 5440	d. 5600	d. 5760	d. 5920	d. 6080	u. 6240	d. 6400	d. 6560	d. 6720	d. 6880	d. 7040	d. 7200	d. 7360	d. 7520	d. 7680	d. 7840	d. 8000
1	132	142	153	166	177	185	190	192	190	188	184	181	178	177	181	188	198	211
3	126	137	149	160	168	174	177	176	175	173	169	168	169	172	179	190	202	214
5	121	132	142	150	155	159	160	159	157	156	155	157	161	168	178	190	202	209
7	116	125	133	138	140	142	142	140	140	140	142	147	155	165	177	189	197	196
9	111	117	121	123	123	123	123	123	124	126	132	140	150	162	174	184	186	174
11	103	106	107	107	106	106	106	108	111	116	126	136	148	160	170	175	168	149
13	94	94	93	91	90	91	92	96	102	111	123	135	148	158	164	161	147	125
15	85	82	79	77	77	79	82	90	99	111	125	138	149	156	155	145	128	108
17	76	72	69	68	69	74	80	90	103	117	131	142	150	151	144	130	115	104
19	69	65	63	63	67	74	84	97	112	126	139	147	150	145	134	121	113	113
21	65	62	62	65	72	82	95	110	125	138	146	150	147	138	128	122	123	132
23	66	65	67	73	83	96	112	126	140	148	152	149	142	134	129	132	142	157
25	71	72	77	87	100	115	131	144	153	156	153	147	139	135	138	149	165	183
27	80	84	93	105	121	136	150	158	161	158	151	143	139	142	153	170	188	203
29	93	100	112	126	142	156	165	167	163	155	146	141	144	154	171	189	205	216
31	108	119	133	147	161	170	173	167	157	147	140	142	151	168	186	202	213	217
33	125	138	152	165	174	176	172	159	146	137	136	145	161	180	196	207	211	209
35	141	155	168	177	179	172	159	143	132	128	135	151	169	186	197	202	199	192
37	156	169	177	179	172	158	139	125	118	123	137	155	172	185	189	187	180	169
39	167	176	177	171	156	136	117	107	109	121	139	156	169	176	174	166	155	144
41	172	175	168	153	132	110	95	94	104	121	140	153	160	159	152	140	129	120
43	171	165	150	127	103	85	80	87	103	122	137	145	145	138	127	114	105	99
45	162	147	124	98	77	68	72	87	106	122	131	132	126	114	101	90	84	84
47	146	123	96	72	59	60	73	92	108	119	121	115	104	91	79	71	69	74
49	124	96	70	53	51	62	81	98	110	113	109	98	84	71	62	58	60	68
51	99	72	52	47	56	73	93	105	109	106	95	81	66	55	50	51	57	68
53	77	55	47	53	70	90	105	110	107	96	82	66	54	46	45	50	58	71
55	62	50	55	71	91	107	115	112	102	87	71	56	47	43	46	53	64	79
57	58	60	75	96	113	123	122	112	97	80	64	52	47	47	53	62	74	89
59	68	83	104	123	134	134	125	110	93	76	63	55	53	56	64	75	88	101
61	92	114	135	148	150	142	126	109	91	76	66	63	65	70	80	91	103	116
63	125	148	164	168	161	147	127	109	93	81	76	76	81	89	98	109	120	130
65	162	180	186	182	168	149	129	112	99	92	90	93	100	109	118	128	136	142
67	196	205	202	189	171	151	132	118	110	107	108	113	121	129	137	145	149	151
69	222	221	210	192	173	153	138	128	124	124	128	134	141	148	154	156	157	153
71	238	229	212	192	173	157	146	140	140	143	147	154	159	163	164	162	157	148
73	245	229	210	190	173	161	156	153	156	160	165	169	171	172	168	160	150	138
75	242	223	204	187	174	167	165	166	170	174	178	179	177	172	163	150	137	123
77	233	214	197	183	175	172	174	176	181	183	184	182	176	165	150	135	120	107
79	219	201	188	179	176	177	180	183	186	187	184	177	165	149	132	115	102	93
81	202	188	179	175	175	179	182	186	187	183	176	164	148	129	111	96	86	83
83	183	174	170	170	173	178	181	183	181	173	161	145	127	108	92	81	76	80
85	165	161	161	165	170	175	176	176	170	158	143	124	105	88	77	72	74	83
87	149	149	154	160	166	170	169	165	155	140	122	104	87	75	70	71	80	93
89	136	141	148	156	162	164	160	153	139	122	104	88	76	70	72	80	93	107
91	128	136	145	153	158	157	150	139	123	107	91	80	74	75	82	95	109	122
93	125	135	145	151	154	150	141	127	112	97	86	81	82	88	100	114	126	135
95	127	139	148	152	151	145	133	119	105	95	90	91	97	109	122	135	143	145
97	135	146	153	154	150	141	129	116	106	101	102	108	119	133	144	153	156	152
99	146	155	159	157	150	139	129	119	114	115	121	132	144	156	164	167	164	154
101	159	165	165	160	151	140	133	128	128	134	145	157	168	177	180	177	168	154
103	172	174	170	162	153	144	141	141	146	156	169	180	189	193	190	183	170	152
105	182	179	172	164	156	151	152	156	166	178	191	200	204	203	196	185	169	151
107	187	180	172	165	160	160	165	173	186	198	208	213	213	208	198	184	168	151
109	186	177	170	166	166	170	178	189	202	212	219	221	217	208	197	182	167	153
111	180	172	167	167	171	180	190	203	214	221	224	222	216	206	194	180	168	160
113	171	165	164	168	176	187	199	212	220	224	223	219	212	202	191	180	172	169
115	159	158	161	169	180	192	204	215	220	221	218	212	205	196	187	180	178	181
117	149	152	159	170	182	194	205	212	214	214	209	203	196	189	184	182	185	193
119	139	146	156	169	181	191	200	204	204	202	197	193	187	183	182	185	192	203
1	132	142	153	166	177	185	190	192	190	188	184	181	178	177	181	188	198	211

The horizontal argument of this table is Arg. I.

Inequalities of the Logarithm of the Radius Vector.

TABLE LII—Continued.

d. 8160	d. 8320	d. 8480	d. 8640	d. 8800	d. 8960	d. 9120	d. 9280	d. 9440	d. 9600	d. 9760	d. 9920	d. 10080	d. 10240	d. 10400	d. 10560	d. 10720	d. 10880	A.
223	227	216	187	144	101	70	59	66	83	105	125	140	147	145	134	118	100	1
220	212	187	148	106	74	59	64	80	100	120	135	143	143	135	118	100	83	3
205	185	150	111	78	62	63	77	98	117	132	141	142	135	122	103	85	69	5
180	151	115	84	66	65	77	97	116	132	141	143	138	127	110	92	75	62	7
150	119	89	72	69	80	98	118	134	144	147	143	133	119	101	85	72	62	9
122	95	78	75	85	103	122	138	149	153	149	141	128	113	96	84	75	70	11
102	85	82	92	109	128	145	156	161	158	150	140	126	112	98	90	84	82	13
94	92	101	117	137	153	165	170	169	161	151	140	127	115	106	101	99	99	15
102	111	127	146	163	175	180	179	173	163	152	142	132	123	119	116	117	117	17
122	137	156	173	185	191	190	184	176	165	156	148	141	136	135	134	135	135	19
148	166	183	194	200	200	195	186	177	168	161	157	153	151	152	152	152	151	21
175	192	203	208	208	203	195	186	178	173	169	168	167	168	168	168	165	162	23
199	210	215	214	209	200	192	185	181	178	179	180	181	183	182	180	175	169	25
214	219	218	211	203	195	188	185	184	186	189	193	194	195	192	188	180	171	27
220	219	212	203	194	187	185	186	189	194	199	203	204	203	199	191	180	169	29
215	208	199	190	183	181	183	188	194	202	207	209	209	207	201	189	177	164	31
201	191	182	176	173	176	181	190	199	207	212	213	211	206	197	184	171	156	33
182	171	165	162	165	172	182	193	202	209	213	212	208	201	189	176	162	147	35
159	151	148	151	158	170	182	193	202	208	210	207	202	192	179	167	152	137	37
136	133	135	143	154	168	181	192	200	204	205	200	193	182	168	155	141	126	39
116	118	125	137	151	166	179	188	195	198	197	191	182	170	157	143	130	116	41
101	107	119	133	148	163	175	183	189	190	187	180	170	157	145	131	119	109	43
90	101	114	130	146	159	170	177	181	182	177	168	157	145	134	121	112	107	45
84	97	112	128	143	155	165	171	174	172	166	156	145	134	124	115	110	110	47
81	96	112	127	141	152	160	164	165	161	155	144	134	125	118	114	115	119	49
82	98	113	128	140	149	155	158	157	152	144	135	126	121	118	120	125	133	51
86	101	116	129	140	147	151	151	148	142	135	128	123	123	126	132	140	150	53
93	107	121	133	141	146	147	145	140	135	129	126	127	132	140	149	159	168	55
102	116	128	137	142	144	142	139	134	130	128	130	136	146	158	168	178	185	57
114	125	135	140	143	141	138	133	130	129	132	141	151	164	177	187	194	197	59
126	135	140	142	141	138	133	130	130	134	143	156	170	183	194	202	205	203	61
138	142	143	141	137	133	130	130	135	144	158	174	188	199	206	210	209	203	63
146	146	143	137	133	130	129	134	144	158	175	191	203	209	212	211	205	196	65
149	144	138	131	127	127	133	142	157	174	190	204	211	212	210	203	194	184	67
147	138	131	124	123	128	138	153	171	187	201	209	211	206	199	187	177	169	69
138	129	122	119	122	132	147	165	182	195	204	206	201	190	179	165	156	153	71
126	117	113	115	124	139	156	175	188	196	198	192	181	166	153	140	136	140	73
112	107	107	115	128	146	164	179	187	188	182	169	153	137	123	116	118	132	75
100	99	105	118	135	153	168	177	177	170	157	139	121	107	96	97	109	134	77
91	96	108	124	141	156	165	167	159	145	126	106	89	78	75	86	110	144	79
87	98	114	131	145	154	156	149	134	114	92	73	60	57	64	88	122	160	81
90	104	121	136	144	146	140	125	104	81	59	44	39	45	67	101	141	176	83
97	113	127	136	138	133	118	97	72	49	32	25	29	48	82	123	161	183	85
108	122	131	133	128	114	93	68	43	25	15	17	34	65	107	147	173	178	87
120	129	131	126	113	93	67	42	22	10	11	25	54	93	134	164	173	162	89
130	133	128	115	95	71	46	24	10	8	21	47	85	125	155	169	160	140	91
137	133	121	102	78	53	30	15	11	21	45	81	120	152	165	158	138	118	93
140	130	112	89	64	41	25	19	26	47	80	119	150	165	159	138	115	103	95
141	124	102	78	56	38	31	36	54	84	120	151	166	161	140	114	99	98	97
138	118	94	73	56	46	49	64	91	125	156	171	164	143	116	96	92	102	99
135	113	91	75	65	65	78	102	133	162	177	171	147	118	95	87	95	113	101
132	112	95	85	84	94	115	143	170	185	179	156	121	96	83	90	107	129	103
132	115	106	104	111	129	154	179	193	188	162	126	96	81	83	100	122	147	105
136	125	123	129	144	166	189	203	198	173	134	98	79	79	92	115	139	162	107
145	141	146	158	178	200	212	208	183	144	104	78	74	85	108	132	155	172	109
157	160	172	188	208	221	217	192	153	111	80	69	79	98	124	146	165	176	111
173	182	197	215	228	225	201	161	117	83	68	72	90	113	138	156	168	171	113
189	203	219	231	230	209	170	124	87	67	67	83	105	128	147	160	164	159	115
205	220	232	232	215	178	131	90	67	63	76	97	120	139	152	157	153	141	117
217	229	231	217	183	138	95	68	61	70	90	112	132	146	151	148	137	121	119
223	227	216	187	144	101	70	59	66	83	105	125	140	147	145	134	118	100	1

The quantities tabulated are in units of the seventh decimal.

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Inequalities of the Logarithm of the Radius Vector.

TABLE LIII.

B.	d. o	d. 640	d. 1280	d. 1920	d. 2560	d. 3200	d. 3840	d. 4480	d. 5120	d. 5760	d. 6400	d. 7040	d. 7680	d. 8320	d. 8960	d. 9600	d. 10240	d. 10880
0	54	56	51	41	33	29	30	35	38	42	45	47	48	45	38	26	15	7
1	47	52	51	45	37	31	29	30	33	37	42	47	51	51	46	35	23	12
2	38	46	48	46	40	34	30	28	28	31	36	43	50	54	52	44	32	20
3	30	39	44	44	41	36	32	27	24	24	29	37	46	53	55	50	40	29
4	24	32	38	41	40	38	34	29	23	20	21	28	39	48	55	53	46	36
5	21	27	33	36	38	38	37	32	25	17	15	19	29	41	50	52	49	41
6	20	25	29	32	35	36	38	36	28	19	12	12	19	31	43	48	48	43
7	22	24	27	29	31	34	37	39	34	23	13	8	12	22	35	42	45	42
8	27	26	27	27	28	31	35	39	38	30	17	8	7	14	27	36	40	39
9	32	30	29	27	26	27	32	38	41	37	25	12	6	10	20	30	35	35
10	38	35	31	28	25	24	27	35	42	42	33	20	10	9	16	25	31	32
11	43	40	35	31	26	23	24	31	40	45	41	28	16	11	15	23	29	31
12	46	44	40	34	28	23	21	26	35	44	45	36	24	16	16	22	27	30
13	46	46	44	39	31	24	20	22	30	41	46	42	32	22	19	22	27	31
14	43	47	46	43	36	27	21	19	25	35	44	45	38	28	22	23	27	31
15	37	43	47	46	40	31	23	18	21	30	40	45	42	33	26	24	28	32
16	29	37	44	46	43	36	27	20	19	25	35	43	44	37	30	26	28	32
17	21	29	39	45	45	40	31	23	19	22	31	39	43	40	33	28	28	31
18	13	20	31	40	44	42	35	27	21	21	27	35	41	41	35	30	29	30
19	8	12	23	34	41	42	38	31	24	21	25	32	38	40	36	33	30	30
20	6	7	16	26	36	40	39	33	27	23	24	29	35	39	37	35	32	31
21	8	6	11	20	30	37	38	35	29	24	23	27	32	36	37	37	35	34
22	13	8	10	17	26	33	36	35	30	25	23	25	29	33	35	37	37	37
23	21	13	12	16	23	30	34	34	30	25	22	23	26	30	32	35	38	40
24	30	21	17	18	23	29	32	32	29	25	22	22	23	26	29	32	37	41
25	37	28	22	22	25	30	32	32	29	25	21	20	21	23	25	28	33	40
26	42	33	27	27	29	32	34	33	30	26	21	19	19	20	21	23	27	35
27	44	37	31	30	32	35	36	35	32	28	23	19	19	19	19	19	21	29
28	43	37	32	31	34	37	39	38	35	31	26	22	20	20	19	17	16	22
29	40	36	32	30	33	37	40	40	38	34	30	26	24	24	21	18	13	15
30	37	33	29	28	30	35	40	42	41	38	34	31	29	28	26	22	15	12
31	33	31	27	25	27	32	37	41	42	40	38	36	35	35	34	29	20	13
32	31	29	25	22	23	27	33	38	40	40	39	39	39	41	41	37	28	18
33	30	29	25	21	20	23	28	33	36	38	38	39	42	45	48	46	39	27
34	30	29	26	22	19	21	24	29	32	34	35	37	41	46	52	53	48	37
35	31	31	28	23	20	20	22	26	28	30	30	32	37	44	52	57	56	47
36	31	32	30	26	23	22	23	25	26	26	25	26	30	38	49	57	60	55
37	31	32	31	28	25	24	25	26	26	25	22	21	23	30	42	52	60	59
38	30	32	31	29	27	28	29	30	30	26	21	18	17	22	33	45	55	59
39	29	31	31	29	28	29	32	34	34	30	23	17	13	15	24	35	47	55
40	30	31	30	29	28	30	34	38	40	36	29	20	13	11	16	26	38	48
41	31	31	30	28	27	29	34	40	44	43	36	27	16	10	11	18	29	40
42	34	33	31	28	25	26	32	40	47	48	44	35	23	14	11	13	22	32
43	37	36	33	29	25	24	29	38	46	52	51	43	32	21	13	12	18	26
44	39	40	37	31	25	22	26	34	44	52	55	51	40	29	20	15	17	22
45	40	42	41	35	28	22	23	29	39	50	57	56	48	38	27	20	18	21
46	38	44	45	41	32	23	21	25	34	46	55	58	54	45	35	27	23	23
47	34	42	47	45	37	27	21	22	29	40	51	57	57	51	42	34	29	27
48	27	38	47	49	42	31	23	20	24	33	45	53	57	54	47	41	35	32
49	21	31	44	50	47	36	26	20	21	28	38	48	54	54	49	45	41	37
50	15	24	37	48	49	41	30	21	19	23	32	41	48	51	49	47	45	42
51	12	17	30	43	50	45	34	24	19	20	26	34	41	45	46	46	46	45
52	14	13	22	36	47	48	39	29	21	20	23	29	34	39	41	42	44	45
53	20	13	17	29	43	48	43	33	25	21	21	25	29	32	34	36	39	42
54	29	18	16	23	37	46	46	38	30	24	22	23	25	26	27	29	32	37
55	39	26	18	20	31	42	46	42	35	29	25	24	23	23	21	22	24	30
56	49	36	24	20	27	38	45	45	40	34	30	27	25	22	18	16	16	21
57	56	46	32	24	25	33	41	45	43	39	35	32	30	25	18	13	10	13
58	60	53	40	30	26	30	37	43	44	43	40	38	36	30	22	14	8	8
59	59	56	47	36	29	29	33	39	42	44	44	43	43	38	29	19	10	6
60	54	56	51	41	33	29	30	35	38	42	45	47	48	45	38	26	15	7

The horizontal argument of this table is Arg. I.

Inequalities of the Logarithm of the Radius Vector.

TABLE LIV.

C.	d. o	d. 640	d. 1280	d. 1920	d. 2560	d. 3200	d. 3840	d. 4480	d. 5120	d. 5760	d. 6400	d. 7040	d. 7680	d. 8320	d. 8960	d. 9600	d. 10240	d. 10880
0	52	59	60	55	46	36	27	21	20	24	31	40	49	54	55	51	43	35
1	48	56	59	56	49	39	29	23	20	23	29	37	47	54	57	54	46	38
2	45	53	58	57	51	41	32	25	21	22	27	35	44	53	57	56	50	41
3	41	50	56	57	52	44	34	26	21	21	25	32	42	51	57	58	53	45
4	38	46	53	56	53	46	37	28	22	21	23	30	39	49	57	59	56	48
5	35	43	51	55	53	47	39	30	23	20	22	27	36	47	55	60	59	52
6	33	40	47	53	54	49	41	32	25	21	21	25	33	44	53	60	61	55
7	32	37	44	51	53	50	43	34	26	21	20	23	30	40	51	59	62	58
8	32	35	41	49	52	50	44	36	28	21	19	20	27	37	48	58	62	61
9	33	33	39	46	51	51	46	38	30	22	18	19	24	33	45	55	62	63
10	35	33	37	44	49	51	47	40	32	24	18	17	21	29	41	52	61	64
11	37	33	35	41	48	50	48	42	34	25	19	16	18	25	36	49	59	64
12	40	34	34	39	46	50	49	44	36	27	20	15	16	22	32	45	56	63
13	44	36	34	37	44	49	50	46	38	29	21	15	14	18	27	40	53	61
14	48	39	35	36	42	47	50	47	41	32	23	15	12	15	23	35	48	59
15	51	42	36	36	40	46	50	49	43	34	25	16	12	12	19	30	44	56
16	55	46	38	36	39	44	49	50	45	37	27	18	12	10	15	25	38	51
17	58	50	41	37	38	43	48	50	48	40	30	20	12	9	11	20	33	47
18	60	53	45	39	38	42	47	51	49	43	34	23	14	8	8	15	27	41
19	62	57	48	41	38	41	46	50	51	46	37	26	16	9	6	11	22	36
20	64	60	52	44	39	40	45	50	52	48	41	30	19	10	5	7	16	30
21	64	62	56	47	41	40	44	49	52	51	44	34	22	12	5	5	12	24
22	63	64	59	50	43	41	43	48	52	53	47	38	26	15	6	3	7	18
23	62	65	62	54	46	42	42	47	52	54	50	42	31	19	8	2	4	13
24	60	65	64	57	49	43	42	46	51	55	53	46	36	23	11	3	2	9
25	56	64	65	60	52	45	43	45	50	55	55	50	40	28	15	5	1	5
26	52	62	65	62	55	48	43	44	49	55	56	54	45	33	19	7	1	3
27	48	59	65	64	58	50	45	44	48	54	57	56	50	38	24	11	3	1
28	43	55	63	65	60	53	46	44	47	53	57	58	54	44	30	16	5	1
29	37	50	60	64	62	56	49	45	46	51	57	60	57	49	36	21	9	2
30	31	45	57	63	63	58	51	46	45	50	56	60	60	53	41	27	13	4
31	25	40	53	61	63	60	53	47	45	48	54	60	61	57	47	33	18	7
32	19	34	48	58	62	61	55	49	45	47	52	59	62	60	52	39	24	11
33	14	28	42	54	61	62	57	51	46	46	50	57	63	63	57	45	30	16
34	10	22	37	50	58	61	59	52	47	45	48	55	62	64	61	51	37	22
35	6	16	31	45	55	60	59	54	48	45	47	53	60	65	63	56	43	28
36	3	12	25	39	51	58	59	56	50	45	45	50	58	64	65	60	48	34
37	1	7	19	33	46	55	59	57	51	46	44	48	55	62	66	63	54	40
38	0	4	14	28	41	52	57	57	53	47	44	45	52	60	66	65	58	46
39	1	2	10	22	36	48	55	57	54	48	44	44	49	57	64	66	61	51
40	3	1	6	18	31	43	52	56	54	49	44	42	46	54	62	66	64	55
41	6	1	4	13	26	39	49	54	55	50	45	41	44	50	59	65	66	59
42	10	3	3	10	21	34	45	52	54	51	46	41	41	47	56	63	66	62
43	15	5	3	7	17	29	41	50	53	52	47	42	40	44	52	61	65	64
44	20	9	4	5	14	25	37	47	52	52	49	43	39	41	48	57	64	64
45	26	13	6	5	11	21	33	43	50	52	50	44	39	39	44	53	61	64
46	33	19	9	5	9	18	29	40	48	52	51	45	40	37	41	49	58	63
47	39	24	13	7	15	25	36	45	51	51	47	40	37	38	45	54	61	61
48	45	30	17	9	9	13	22	33	42	49	51	48	42	37	36	42	50	58
49	50	36	22	13	9	12	19	29	39	47	51	49	44	38	35	38	46	55
50	55	42	28	17	11	12	17	27	36	45	50	50	46	39	35	36	43	51
51	59	47	33	21	13	12	16	24	34	43	49	51	47	41	35	34	39	48
52	62	52	39	26	17	13	15	22	31	40	48	51	49	43	36	33	36	44
53	64	56	44	31	20	15	15	20	28	38	46	51	50	45	38	33	34	40
54	65	59	48	35	24	17	16	19	26	35	44	50	52	48	41	34	33	37
55	65	61	52	40	28	20	17	18	24	33	42	49	52	50	43	36	33	35
56	64	62	55	44	32	23	18	18	23	31	39	48	52	52	46	38	33	33
57	62	63	57	48	36	26	20	18	22	29	37	46	52	53	49	41	35	33
58	59	62	59	51	40	29	22	19	21	27	35	44	51	54	51	44	37	33
59	56	61	60	53	43	33	24	20	21	25	33	42	50	54	54	48	39	34
60	52	59	60	55	46	36	27	21	20	24	31	40	49	54	55	51	43	35

The quantities tabulated are in units of the seventh decimal.

Inequalities of the Logarithm of the Radius Vector—Factor to be multiplied by m.

TABLE LV.

Arg. I.	Equa.	Arg. I.	Equa.	Arg. I.	Equa.	Arg. I.	Equa.	Arg. I.	Equa.
d.		d.		d.		d.		d.	
0	+434.2	2200	-591.7	4400	-729.9	6600	+121.9	8800	+832.8
40	416.3	2240	605.3	4440	721.0	6640	140.4	8840	835.8
80	398.2	2280	618.5	4480	711.7	6680	158.9	8880	838.4
120	379.8	2320	631.4	4520	702.1	6720	177.3	8920	840.5
160	361.3	2360	643.9	4560	692.1	6760	195.6	8960	842.1
200	342.5	2400	656.0	4600	681.8	6800	213.8	9000	843.2
240	323.5	2440	667.7	4640	671.2	6840	232.0	9040	843.8
280	304.3	2480	679.0	4680	660.2	6880	250.1	9080	844.0
320	284.9	2520	690.0	4720	648.9	6920	268.0	9120	843.7
360	265.4	2560	700.5	4760	637.3	6960	285.9	9160	842.9
400	245.8	2600	710.7	4800	625.4	7000	303.6	9200	841.6
440	226.0	2640	720.4	4840	613.2	7040	321.2	9240	839.8
480	206.1	2680	729.8	4880	600.7	7080	338.7	9280	837.5
520	186.0	2720	738.7	4920	587.8	7120	356.0	9320	834.7
560	165.9	2760	747.2	4960	574.7	7160	373.1	9360	831.5
600	145.7	2800	755.3	5000	561.4	7200	390.1	9400	827.7
640	125.4	2840	763.0	5040	547.7	7240	406.9	9440	823.5
680	105.1	2880	770.2	5080	533.8	7280	423.5	9480	818.8
720	84.7	2920	777.0	5120	519.6	7320	439.9	9520	813.6
760	64.3	2960	783.4	5160	505.1	7360	456.1	9560	807.9
800	43.8	3000	789.4	5200	490.4	7400	472.1	9600	801.7
840	23.4	3040	794.9	5240	475.5	7440	487.9	9640	795.1
880	+2.9	3080	800.0	5280	460.4	7480	503.5	9680	787.9
920	-17.5	3120	804.7	5320	445.0	7520	518.8	9720	780.4
960	37.9	3160	808.9	5360	429.3	7560	533.8	9760	772.3
1000	58.2	3200	812.8	5400	413.5	7600	548.6	9800	763.8
1040	78.5	3240	816.1	5440	397.5	7640	563.2	9840	754.8
1080	98.8	3280	819.1	5480	381.3	7680	577.4	9880	745.4
1120	118.9	3320	821.6	5520	364.8	7720	591.4	9920	735.5
1160	138.9	3360	823.6	5560	348.2	7760	605.1	9960	725.1
1200	158.9	3400	825.3	5600	331.5	7800	618.4	10000	714.4
1240	178.7	3440	826.5	5640	314.5	7840	631.5	10040	703.2
1280	198.4	3480	827.2	5680	297.4	7880	644.3	10080	691.6
1320	218.0	3520	827.5	5720	280.1	7920	656.7	10120	679.5
1360	237.4	3560	827.4	5760	262.7	7960	668.8	10160	667.1
1400	256.7	3600	826.9	5800	245.2	8000	680.5	10200	654.2
1440	275.7	3640	826.0	5840	227.5	8040	691.9	10240	640.9
1480	294.6	3680	824.6	5880	209.7	8080	702.9	10280	627.3
1520	313.3	3720	822.8	5920	191.8	8120	713.6	10320	613.3
1560	331.8	3760	820.5	5960	173.8	8160	723.9	10360	598.9
1600	350.1	3800	817.9	6000	155.7	8200	733.8	10400	584.1
1640	368.1	3840	814.8	6040	137.5	8240	743.4	10440	569.0
1680	385.9	3880	811.4	6080	119.2	8280	752.5	10480	553.6
1720	403.5	3920	807.5	6120	100.8	8320	761.2	10520	537.8
1760	420.8	3960	803.2	6160	82.4	8360	769.6	10560	521.7
1800	437.8	4000	798.5	6200	63.9	8400	777.5	10600	505.3
1840	454.6	4040	793.4	6240	45.4	8440	785.0	10640	488.5
1880	471.1	4080	787.8	6280	26.9	8480	792.1	10680	471.5
1920	487.3	4120	781.9	6320	-8.3	8520	798.7	10720	454.2
1960	503.2	4160	775.7	6360	+10.3	8560	805.0	10760	436.7
2000	518.7	4200	769.0	6400	28.9	8600	810.7	10800	418.8
2040	534.0	4240	761.9	6440	47.6	8640	816.1	10840	400.8
2080	548.9	4280	754.5	6480	66.2	8680	820.9	10880	+382.5
2120	563.6	4320	746.6	6520	84.8	8720	825.3		
2160	577.8	4360	738.4	6560	103.4	8760	829.3		
2200	-591.7	4400	-729.9	6600	+121.9	8800	+832.8		

Inequalities of the Logarithm of the Radius Vector—Factor to be multiplied by m.

TABLE LVI.

A.	d. o	d. 320	d. 640	d. 960	d. 1280	d. 1600	d. 1920	d. 2240	d. 2560	d. 2880	d. 3200	d. 3520	d. 3840	d. 4160	d. 4480	d. 4800	d. 5120	d. 5440
1	16.2	17.3	18.2	19.2	20.1	20.7	21.3	21.7	21.9	21.8	21.1	20.0	18.4	16.8	15.2	13.6	12.0	10.3
3	16.1	17.2	18.4	19.5	20.6	21.3	22.0	22.5	22.6	22.3	21.3	19.9	18.1	16.6	15.0	13.3	11.5	9.7
5	15.7	16.9	18.1	19.4	20.5	21.5	22.3	22.7	22.7	22.2	21.0	19.6	18.0	16.4	14.8	13.1	11.3	9.3
7	15.0	16.2	17.5	18.8	20.0	21.1	21.9	22.4	22.2	21.5	20.4	19.1	17.6	16.1	14.7	13.1	11.2	9.3
9	14.0	15.2	16.5	17.8	19.1	20.2	21.1	21.5	21.2	20.5	19.6	18.4	17.2	16.0	14.7	13.2	11.4	9.6
11	12.9	14.0	15.2	16.5	17.8	19.0	19.9	20.2	19.9	19.3	18.6	17.7	16.9	15.9	14.8	13.4	11.8	10.4
13	11.8	12.7	13.8	15.1	16.4	17.5	18.3	18.5	18.3	17.9	17.5	17.1	16.6	15.9	15.0	13.8	12.5	11.4
15	10.6	11.4	12.4	13.6	14.8	15.9	16.6	16.8	16.7	16.6	16.5	16.5	16.3	15.9	15.2	14.3	13.4	12.7
17	9.7	10.3	11.0	12.1	13.2	14.2	14.7	15.0	15.1	15.3	15.6	15.9	16.0	15.9	15.5	14.9	14.4	14.2
19	8.9	9.3	9.9	10.8	11.8	12.5	13.0	13.3	13.7	14.2	14.8	15.4	15.7	15.8	15.7	15.5	15.6	15.8
21	8.5	8.5	8.9	9.6	10.4	11.0	11.3	11.8	12.4	13.2	13.9	14.8	15.4	15.7	15.9	16.2	16.7	17.4
23	8.3	8.1	8.2	8.7	9.3	9.6	9.9	10.5	11.2	12.2	13.1	14.1	14.9	15.4	16.0	16.8	17.8	18.9
25	8.4	7.9	7.9	8.1	8.3	8.5	8.8	9.4	10.2	11.3	12.3	13.4	14.3	15.1	16.1	17.3	18.7	20.2
27	8.8	8.1	7.8	7.8	7.7	7.6	7.9	8.5	9.4	10.4	11.5	12.6	13.6	14.7	16.0	17.6	19.4	21.3
29	9.4	8.5	8.0	7.6	7.2	7.0	7.2	7.8	8.6	9.5	10.6	11.7	12.9	14.2	16.0	17.9	20.0	22.1
31	10.1	9.1	8.3	7.7	7.1	6.7	6.8	7.2	7.9	8.7	9.7	10.9	12.2	13.9	15.9	18.1	20.4	22.8
33	10.9	9.8	8.8	7.9	7.1	6.6	6.5	6.7	7.3	8.0	9.0	10.1	11.7	13.6	15.9	18.3	20.8	23.2
35	11.8	10.6	9.4	8.3	7.4	6.7	6.5	6.5	6.9	7.5	8.5	9.7	11.4	13.5	16.0	18.5	21.1	23.6
37	12.7	11.4	10.1	8.9	7.8	7.1	6.7	6.5	6.7	7.3	8.3	9.7	11.5	13.8	16.3	18.8	21.4	23.8
39	13.5	12.2	10.8	9.6	8.5	7.6	7.1	6.9	7.0	7.5	8.6	10.1	12.0	14.3	16.8	19.3	21.8	24.0
41	14.2	12.9	11.6	10.4	9.4	8.5	7.9	7.6	7.7	8.3	9.5	11.0	13.0	15.2	17.6	20.0	22.2	24.1
43	14.8	13.6	12.5	11.4	10.5	9.6	9.0	8.8	9.0	9.7	10.9	12.5	14.4	16.5	18.6	20.7	22.6	24.2
45	15.3	14.4	13.6	12.7	11.9	11.1	10.7	10.5	10.9	11.6	12.8	14.5	16.2	18.1	19.8	21.5	23.0	24.1
47	15.9	15.3	14.7	14.2	13.5	13.0	12.7	12.8	13.3	14.2	15.3	16.8	18.3	19.8	21.2	22.3	23.2	23.9
49	16.4	16.3	16.1	15.8	15.5	15.3	15.2	15.5	16.1	17.0	18.1	19.4	20.6	21.7	22.4	23.1	23.4	23.5
51	17.0	17.3	17.6	17.7	17.7	17.8	18.0	18.5	19.3	20.2	21.2	22.2	22.9	23.4	23.6	23.6	23.3	22.9
53	17.7	18.5	19.2	19.7	20.1	20.6	21.1	21.8	22.7	23.5	24.2	24.8	25.0	25.0	24.6	23.9	23.0	22.1
55	18.5	19.8	20.9	21.8	22.6	23.5	24.3	25.1	26.0	26.6	27.1	27.2	26.9	26.3	25.2	23.9	22.5	21.0
57	19.3	21.1	22.6	23.9	25.1	26.2	27.3	28.2	29.0	29.4	29.5	29.2	28.4	27.2	25.4	23.6	21.7	19.7
59	20.2	22.4	24.2	25.9	27.4	28.8	29.9	30.9	31.6	31.8	31.5	30.7	29.4	27.6	25.4	23.1	20.7	18.3
61	21.1	23.5	25.7	27.6	29.4	30.9	32.2	33.1	33.6	33.5	32.9	31.7	29.9	27.6	24.9	22.3	19.6	16.9
63	21.9	24.5	26.8	28.9	30.9	32.5	33.8	34.6	34.9	34.5	33.6	32.0	29.8	27.1	24.3	21.5	18.5	15.5
65	22.5	25.1	27.6	29.8	31.9	33.5	34.7	35.4	35.4	34.8	33.7	31.7	29.2	26.4	23.4	20.5	17.4	14.2
67	22.9	25.6	28.0	30.3	32.3	33.9	34.9	35.4	35.2	34.4	33.0	30.9	28.3	25.4	22.4	19.5	16.3	13.1
69	23.1	25.6	28.0	30.2	32.1	33.6	34.4	34.7	34.4	33.4	31.9	29.6	26.9	24.2	21.3	18.4	15.4	12.3
71	23.1	25.4	27.7	29.7	31.4	32.6	33.3	33.4	32.9	31.8	30.2	27.9	25.4	22.8	20.1	17.4	14.5	11.7
73	22.9	25.0	27.0	28.7	30.1	31.1	31.5	31.5	30.8	29.7	28.1	26.0	23.7	21.3	18.9	16.3	13.8	11.4
75	22.6	24.3	25.9	27.4	28.5	29.2	29.4	29.1	28.4	27.2	25.6	23.8	21.8	19.7	17.6	15.3	13.2	11.3
77	22.1	23.5	24.7	25.8	26.5	26.9	26.8	26.4	25.6	24.5	23.0	21.4	19.7	18.0	16.2	14.3	12.6	11.4
79	21.7	22.6	23.4	24.0	24.3	24.3	24.0	23.4	22.6	21.5	20.2	19.0	17.6	16.2	14.7	13.2	12.2	11.5
81	21.3	21.7	22.0	22.1	21.9	21.6	21.0	20.3	19.5	18.5	17.4	16.4	15.4	14.2	13.1	12.2	11.8	11.8
83	20.9	20.8	20.5	20.1	19.4	18.7	17.9	17.1	16.3	15.5	14.5	13.9	13.1	12.2	11.5	11.3	11.5	12.1
85	20.5	19.8	19.0	18.1	17.0	15.9	14.9	14.0	13.2	12.5	11.8	11.3	10.7	10.2	10.1	10.4	11.2	12.4
87	20.0	18.9	17.5	16.1	14.5	13.2	12.0	11.0	10.2	9.6	9.1	8.7	8.4	8.4	8.7	9.7	11.1	12.7
89	19.6	17.9	16.0	14.1	12.2	10.6	9.3	8.2	7.5	7.0	6.7	6.4	6.3	6.7	7.7	9.2	11.1	13.1
91	19.0	16.8	14.5	12.3	10.1	8.3	6.8	5.8	5.1	4.6	4.5	4.3	4.5	5.4	6.9	9.0	11.3	13.5
93	18.4	15.8	13.1	10.6	8.2	6.3	4.8	3.8	3.1	2.7	2.6	2.7	3.2	4.6	6.6	9.1	11.6	14.0
95	17.6	14.7	11.8	9.1	6.7	4.7	3.3	2.3	1.7	1.3	1.3	1.5	2.5	4.3	6.7	9.4	12.0	14.4
97	16.7	13.7	10.7	8.0	5.6	3.7	2.3	1.4	.8	.5	.6	1.0	2.4	4.6	7.2	10.0	12.6	14.9
99	15.7	12.8	9.9	7.3	5.0	3.2	1.9	1.1	.6	.3	.5	1.2	2.9	5.3	8.0	10.7	13.1	15.3
101	14.8	12.1	9.5	7.1	5.0	3.3	2.2	1.5	1.0	.8	1.1	2.1	4.0	6.5	9.1	11.5	13.7	15.6
103	14.1	11.7	9.4	7.3	5.5	4.1	3.1	2.5	2.0	1.9	2.4	3.6	5.7	8.0	10.4	12.4	14.2	15.8
105	13.6	11.6	9.7	8.0	6.5	5.3	4.6	4.1	3.6	3.6	4.2	5.6	7.7	9.8	11.6	13.2	14.6	15.8
107	13.3	11.9	10.5	9.1	7.9	7.1	6.5	6.1	5.7	5.9	6.6	8.0	9.8	11.5	12.8	13.8	14.8	15.6
109	13.3	12.4	11.5	10.5	9.7	9.2	8.8	8.4	8.2	8.4	9.3	10.6	12.0	13.1	13.9	14.3	14.7	15.1
111	13.7	13.3	12.8	12.2	11.8	11.5	11.3	11.0	10.9	11.2	12.1	13.1	14.0	14.5	14.6	14.6	14.5	14.6
113	14.2	14.3	14.2	13.9	13.9	13.9	13.8	13.6	13.6	14.0	14.7	15.3	15.6	15.5	15.1	14.6	14.2	13.8
115	14.9	15.3	15.5	15.7	15.9	16.1	16.1	16.2	16.7	17.0	17.2	17.0	16.3	15.5	14.5	13.7	12.9	12.9
117	15.5	16.2	16.7	17.2	17.7	18.1	18.3	18.4	18.6	18.9	19.0	18.6	17.8	16.7	15.5	14.3	13.1	12.0
119	16.0	16.9	17.6	18.4	19.1	19.6	20.0	20.3	20.5	20.6	20.3	19.6	18.3	16.9	15.4	14.0	12.6	11.1
1	16.2	17.3	18.2	19.2	20.1	20.7	21.3	21.7	21.9	21.8	21.1	20.0	18.4	16.8	15.2	13.6	12.0	10.3

The quantities tabulated are in units of the seventh decimal.

Inequalities of the Logarithm of the Radius Vector—Factor to be multiplied by m.

TABLE LVI—Continued.

A.	d. 5440	d. 5760	d. 6080	d. 6400	d. 6720	d. 7040	d. 7360	d. 7680	d. 8000	d. 8320	d. 8640	d. 8960	d. 9280	d. 9600	d. 9920	d. 10240	d. 10560	d. 10880	d. 11200
1	10.3	8.5	6.9	5.8	5.1	4.6	4.5	4.8	5.2	5.9	7.0	8.4	10.3	12.4	14.4	16.6	18.8	21.1	23.1
3	9.7	7.8	6.2	5.1	4.5	4.0	4.0	4.2	4.6	5.3	6.6	8.2	10.3	12.4	14.6	17.0	19.6	22.0	24.4
5	9.3	7.5	5.9	5.0	4.4	4.0	4.0	4.2	4.6	5.4	6.7	8.5	10.5	12.6	14.9	17.5	20.2	22.9	25.4
7	9.3	7.6	6.2	5.4	4.9	4.7	4.7	4.8	5.2	6.0	7.4	9.2	11.1	13.1	15.4	18.0	20.8	23.5	26.2
9	9.6	8.1	7.1	6.4	6.1	5.9	6.0	6.0	6.4	7.2	8.6	10.1	11.8	13.7	16.0	18.5	21.3	24.0	26.6
11	10.4	9.2	8.5	7.9	7.7	7.7	7.7	7.7	8.0	8.8	10.1	11.4	12.8	14.5	16.6	19.0	21.6	24.1	26.6
13	11.4	10.6	10.3	9.9	9.8	9.8	9.9	9.7	10.1	10.8	11.8	12.8	13.9	15.4	17.2	19.4	21.8	24.1	26.4
15	12.7	12.4	12.4	12.3	12.2	12.3	12.2	12.1	12.5	13.0	13.7	14.4	15.1	16.3	17.8	19.7	21.8	23.8	25.8
17	14.2	14.3	14.7	14.8	14.8	14.9	14.8	14.7	15.0	15.3	15.7	16.0	16.4	17.3	18.5	20.0	21.7	23.3	25.0
19	15.8	16.4	17.0	17.4	17.5	17.5	17.4	17.4	17.5	17.6	17.6	17.6	17.8	18.3	19.2	20.2	21.5	22.8	24.0
21	17.4	18.3	19.2	19.8	20.0	20.1	19.9	20.0	20.0	19.9	19.6	19.3	19.2	19.4	19.8	20.5	21.3	22.2	23.0
23	18.9	20.2	21.3	22.1	22.3	22.4	22.4	22.5	22.4	22.1	21.5	21.0	20.6	20.5	20.5	20.8	21.1	21.5	21.8
25	20.2	21.8	23.1	24.0	24.4	24.6	24.6	24.8	24.5	24.0	23.3	22.6	22.1	21.6	21.3	21.1	21.0	20.9	20.7
27	21.3	23.1	24.5	25.6	26.2	26.5	26.6	26.8	26.5	25.8	25.0	24.2	23.4	22.7	22.0	21.4	20.9	20.3	19.5
29	22.1	24.1	25.6	26.8	27.6	28.1	28.3	28.5	28.1	27.4	26.6	25.6	24.7	23.7	22.8	21.8	20.8	19.6	18.4
31	22.8	24.8	26.4	27.7	28.7	29.3	29.7	29.8	29.5	28.8	27.9	26.9	25.8	24.6	23.4	22.0	20.6	18.9	17.2
33	23.2	25.3	27.0	28.3	29.5	30.2	30.7	30.8	30.4	29.8	28.9	27.8	26.6	25.3	23.8	22.2	20.3	18.2	16.0
35	23.6	25.6	27.3	28.7	29.9	30.8	31.2	31.4	31.0	30.4	29.5	28.4	27.1	25.7	24.0	22.0	19.8	17.4	14.7
37	23.8	25.8	27.4	28.8	30.0	30.9	31.4	31.4	31.2	30.6	29.7	28.6	27.2	25.7	23.8	21.6	19.1	16.4	13.6
39	24.0	25.8	27.4	28.7	29.8	30.6	31.0	31.0	30.7	30.2	29.3	28.2	26.9	25.3	23.3	21.0	18.3	15.5	12.5
41	24.1	25.7	27.1	28.2	29.1	29.8	30.1	30.1	29.8	29.2	28.3	27.4	26.0	24.4	22.4	20.0	17.3	14.5	11.6
43	24.2	25.5	26.7	27.5	28.1	28.5	28.7	28.6	28.2	27.7	26.9	25.9	24.7	23.1	21.2	18.9	16.3	13.7	11.0
45	24.1	25.1	25.9	26.4	26.6	26.7	26.7	26.5	26.1	25.6	24.9	24.1	22.9	21.5	19.7	17.6	15.4	13.1	10.7
47	23.9	24.5	24.8	24.9	24.7	24.5	24.3	24.0	23.6	23.1	22.5	21.8	20.8	19.6	18.1	16.4	14.6	12.7	10.8
49	23.5	23.6	23.4	23.0	22.4	21.9	21.5	21.1	20.6	20.2	19.8	19.3	18.5	17.6	16.5	15.3	14.0	12.7	11.3
51	22.9	22.4	21.7	20.8	19.8	19.0	18.4	18.0	17.5	17.2	17.0	16.6	16.2	15.6	15.0	14.4	13.7	13.0	12.1
53	22.1	21.0	19.7	18.4	17.1	16.1	15.3	14.8	14.4	14.3	14.2	14.0	13.9	13.8	13.8	13.8	13.7	13.5	13.1
55	21.0	19.3	17.5	15.8	14.3	13.1	12.3	11.8	11.5	11.5	11.5	11.6	11.9	12.3	12.9	13.5	14.0	14.2	14.2
57	19.7	17.5	15.2	13.3	11.7	10.4	9.5	9.0	8.9	8.9	9.2	9.6	10.2	11.2	12.3	13.4	14.4	15.0	15.4
59	18.3	15.7	13.1	11.0	9.4	8.0	7.2	6.7	6.7	6.9	7.3	7.9	9.0	10.4	12.0	13.6	14.9	15.8	16.4
61	16.9	14.0	11.2	9.0	7.4	6.1	5.3	5.0	5.0	5.3	5.9	6.8	8.2	10.0	12.0	13.8	15.3	16.4	17.2
63	15.5	12.4	9.6	7.5	6.0	4.8	4.1	3.8	3.9	4.3	5.0	6.2	7.9	10.0	12.1	14.0	15.5	16.7	17.6
65	14.2	11.1	8.4	6.5	5.1	4.1	3.6	3.3	3.4	3.9	4.7	6.1	8.0	10.1	12.2	14.1	15.4	16.6	17.7
67	13.1	10.2	7.8	6.0	4.8	4.0	3.6	3.4	3.5	4.0	4.9	6.4	8.3	10.3	12.3	13.9	15.1	16.2	17.4
69	12.3	9.7	7.6	6.1	5.0	4.4	4.1	3.9	4.0	4.5	5.5	7.0	8.8	10.6	12.2	13.5	14.5	15.5	16.7
71	11.7	9.5	7.8	6.6	5.7	5.3	5.1	4.9	5.0	5.5	6.5	7.8	9.4	10.8	12.0	12.8	13.6	14.5	15.8
73	11.4	9.6	8.4	7.5	6.8	6.6	6.4	6.2	6.3	6.8	7.7	8.8	10.0	10.9	11.6	12.0	12.6	13.4	14.5
75	11.3	10.1	9.3	8.7	8.2	8.1	8.0	7.8	7.9	8.3	9.0	9.8	10.5	10.9	11.0	11.2	11.5	12.2	13.2
77	11.4	10.7	10.3	10.1	9.8	9.8	9.7	9.5	9.6	10.0	10.5	10.8	11.0	10.8	10.5	10.4	10.5	11.0	11.8
79	11.5	11.4	11.4	11.5	11.5	11.5	11.5	11.4	11.6	11.8	11.9	11.9	11.9	11.5	10.8	10.1	9.7	9.7	10.6
81	11.8	12.1	12.6	12.9	13.2	13.3	13.3	13.3	13.5	13.5	13.3	12.9	12.0	10.9	9.9	9.3	9.1	9.1	9.5
83	12.1	12.9	13.7	14.4	14.8	15.1	15.1	15.3	15.4	15.2	14.7	13.8	12.6	11.2	10.0	9.3	8.7	8.5	8.7
85	12.4	13.6	14.7	15.7	16.4	16.7	16.9	17.1	17.2	16.8	16.0	14.8	13.3	11.8	10.5	9.5	8.7	8.2	8.1
87	12.7	14.3	15.7	16.9	17.8	18.3	18.0	18.8	18.9	18.3	17.3	15.9	14.2	12.6	11.2	10.0	9.0	8.2	7.8
89	13.1	15.0	16.6	17.9	19.0	19.7	20.1	20.4	20.3	19.6	18.5	16.9	15.3	13.7	12.1	10.7	9.5	8.5	7.9
91	13.5	15.6	17.3	18.8	20.1	20.9	21.4	21.7	21.6	20.7	19.5	18.0	16.4	14.8	13.2	11.6	10.1	9.0	8.2
93	14.0	16.1	17.9	19.5	20.9	21.9	22.5	22.7	22.5	21.7	20.4	19.0	17.6	16.0	14.4	12.6	11.0	9.7	8.7
95	14.4	16.6	18.4	20.1	21.5	22.5	23.2	23.4	23.1	22.3	21.2	20.0	18.7	17.2	15.4	13.5	11.8	10.4	9.3
97	14.9	17.0	18.8	20.4	21.8	22.8	23.4	23.6	23.3	22.6	21.7	20.7	19.5	18.1	16.3	14.4	12.7	11.3	10.1
99	15.3	17.2	18.9	20.4	21.7	22.7	23.3	23.4	23.2	22.6	21.9	21.1	20.1	18.7	16.9	15.1	13.5	12.1	10.8
101	15.6	17.3	18.9	20.2	21.2	22.1	22.6	22.7	22.6	22.2	21.8	21.2	20.3	18.9	17.3	15.6	14.2	12.9	11.6
103	15.8	17.2	18.5	19.6	20.4	21.2	21.6	21.6	21.6	21.4	21.2	20.8	20.0	18.8	17.4	16.0	14.8	13.6	12.4
105	15.8	16.9	17.9	18.6	19.2	19.7	20.1	20.2	20.2	20.2	20.2	19.9	19.3	18.3	17.2	16.2	15.3	14.3	13.2
107	15.6	16.3	17.0	17.4	17.6	18.0	18.2	18.3	18.5	18.7	18.9	18.7	18.2	17.5	16.9	16.3	15.7	14.9	14.1
109	15.1	15.5	15.8	15.9	15.8	15.8	16.0	16.2	16.5	16.8	17.2	17.1	16.9	16.6	16.4	16.2	16.0	15.6	15.1
111	14.6	14.5	14.4	14.1	13.8	13.8	13.7	13.9	14.3	14.8	15.2	15.3	15.4	15.6	15.9	16.2	16.2	16.3	16.2
113	13.8	13.4	12.8	12.2	11.7	11.5	11.4	11.6	12.1	12.6	13.1	13.5	13.9	14.6	15.4	16.1	16.6	17.1	17.4
115	12.9	12.1	11.1	10.3	9.7	9.3	9.2	9.5	9.9	10.5	11.1	11.7	12.6	13.7	14.9	16.0	17.0	18.0	18.8
117	12.0	10.8	9.5	8.5	7.8	7.4	7.2	7.5	8.0	8.6	9.3	10.2	11.5	13.0	14.6	16.1	17.5	19.0	20.2
119	11.1	9.5	8.0	7.0	6.3	5.7	5.6	5.9	6.4	7.0	7.9	9.1	10.7	12.6	14.4	16.3	18.1	20.0	21.7
1	10.3	8.5	6.9	5.8	5.1	4.6	4.5	4.8	5.2	5.9	7.0	8.4	10.3	12.4	14.4	16.6	18.8	21.1	23.1

The horizontal argument of this table is Arg. I.

Inequalities of the Log. Radius Vector—Factor to be $\times m$.

TABLE LVII.

B.	d. o	d. 960	d. 1920	d. 2880	d. 3840	d. 4800	d. 5760	d. 6720	d. 7680	d. 8640	d. 9600	d. 10560	d. 11520
0	.8	.6	.4	.2	.1	.1	.2	.4	.6	1.0	1.2	1.1	.9
1	.9	.7	.5	.3	.2	.1	.2	.3	.5	.8	1.1	1.1	1.0
2	1.0	.8	.6	.4	.2	.2	.2	.2	.4	.7	1.0	1.1	1.0
3	1.0	.9	.7	.5	.4	.2	.2	.2	.3	.5	.8	1.1	1.0
4	1.0	1.0	.8	.6	.5	.3	.3	.2	.2	.4	.7	1.0	1.0
5	.9	1.0	.9	.8	.6	.5	.4	.3	.2	.3	.5	.8	1.0
6	.8	.9	.9	.9	.7	.6	.5	.3	.2	.2	.4	.7	.9
7	.7	.8	.9	.9	.9	.7	.6	.4	.3	.2	.3	.6	.8
8	.5	.7	.9	1.0	1.0	.8	.7	.5	.3	.1	.2	.4	.7
9	.3	.6	.8	1.0	1.0	.9	.8	.6	.4	.2	.1	.3	.5
10	.2	.5	.7	.9	1.0	1.0	.9	.7	.5	.2	.1	.2	.5
11	.1	.3	.6	.9	1.0	1.0	.9	.8	.6	.3	.1	.2	.4
12	.0	.2	.5	.8	.9	1.0	1.0	.9	.7	.4	.2	.2	.3
13	.0	.2	.4	.6	.8	1.0	1.0	.9	.8	.6	.3	.2	.3
14	.1	.1	.3	.5	.7	.9	.9	1.0	.9	.8	.4	.2	.3
15	.2	.1	.2	.4	.6	.8	.9	1.0	1.0	.9	.6	.4	.3
16	.3	.2	.2	.3	.5	.6	.8	.9	1.0	1.0	.7	.5	.3
17	.5	.3	.2	.3	.3	.5	.7	.9	1.0	1.1	.9	.6	.4
18	.7	.4	.2	.2	.2	.4	.5	.8	1.0	1.1	1.0	.8	.6
19	.9	.6	.3	.2	.2	.3	.4	.6	.9	1.1	1.1	.9	.7
20	1.0	.7	.4	.3	.2	.3	.3	.5	.8	1.0	1.1	1.0	.8
21	1.1	.8	.5	.4	.2	.2	.3	.4	.6	.9	1.1	1.0	.8
22	1.1	.9	.7	.5	.3	.2	.2	.3	.5	.8	1.0	1.0	.9
23	1.1	1.0	.8	.6	.4	.3	.3	.2	.4	.6	.9	1.0	.9
24	1.1	1.0	.9	.7	.5	.4	.3	.2	.3	.5	.8	.9	.9
25	1.0	1.0	.9	.8	.6	.5	.4	.2	.2	.3	.6	.8	.9
26	.9	1.0	.9	.9	.8	.6	.5	.3	.2	.3	.4	.7	.8
27	.8	.9	.9	.9	.9	.7	.6	.4	.2	.2	.3	.5	.7
28	.6	.8	.9	.9	.9	.8	.7	.5	.2	.1	.2	.4	.6
29	.5	.7	.9	.9	1.0	.9	.8	.6	.3	.2	.1	.3	.6
30	.4	.6	.8	.9	1.0	1.0	.9	.7	.4	.2	.1	.3	.5
31	.3	.5	.7	.8	1.0	1.0	.9	.8	.5	.3	.2	.2	.4
32	.2	.4	.6	.8	.9	1.0	.9	.6	.4	.2	.2	.2	.3
33	.2	.3	.5	.6	.8	.9	1.0	.9	.7	.5	.3	.2	.3
34	.2	.3	.4	.5	.7	.8	.9	1.0	.8	.6	.4	.3	.3
35	.2	.3	.4	.4	.6	.7	.9	1.0	.9	.8	.5	.3	.3
36	.3	.3	.3	.3	.5	.6	.8	1.0	1.0	.9	.7	.4	.3
37	.4	.3	.3	.3	.3	.5	.7	.9	1.1	1.0	.8	.6	.4
38	.6	.4	.3	.2	.2	.3	.6	.8	1.0	1.1	1.0	.7	.5
39	.7	.5	.4	.2	.2	.2	.4	.7	1.0	1.1	1.1	.8	.6
40	.8	.6	.4	.3	.2	.1	.3	.6	.9	1.1	1.1	.9	.8
41	1.0	.7	.5	.3	.2	.1	.2	.5	.8	1.0	1.1	1.0	.9
42	1.0	.8	.7	.4	.3	.1	.1	.4	.6	.9	1.0	1.0	.9
43	1.0	.9	.8	.6	.3	.2	.1	.3	.5	.7	.9	1.0	1.0
44	1.0	.9	.8	.7	.5	.3	.2	.2	.3	.6	.8	.9	1.0
45	.9	.9	.9	.8	.6	.4	.3	.2	.2	.4	.6	.8	.9
46	.8	.9	.9	.9	.8	.6	.4	.2	.1	.2	.4	.6	.8
47	.7	.8	.9	1.0	.9	.7	.5	.3	.1	.1	.2	.5	.7
48	.6	.8	.9	1.0	1.0	.9	.6	.4	.2	.1	.1	.3	.5
49	.5	.7	.8	1.0	1.0	1.0	.8	.5	.2	.1	.0	.2	.4
50	.4	.6	.8	.9	1.0	1.0	.9	.7	.4	.1	.0	.1	.3
51	.3	.5	.7	.9	1.0	1.1	1.0	.8	.5	.2	.0	.0	.2
52	.2	.4	.6	.8	.9	1.0	1.0	.9	.7	.4	.2	.0	.1
53	.2	.4	.5	.7	.8	1.0	1.0	.9	.8	.6	.3	.1	.1
54	.2	.3	.4	.5	.7	.8	.9	1.0	.9	.7	.5	.2	.1
55	.3	.3	.3	.4	.6	.7	.8	.9	1.0	.9	.7	.4	.2
56	.3	.2	.3	.3	.5	.6	.7	.9	1.0	1.0	.9	.6	.3
57	.4	.3	.3	.2	.3	.4	.6	.8	1.0	1.1	1.0	.7	.5
58	.5	.3	.3	.2	.2	.3	.4	.6	.9	1.1	1.1	.9	.6
59	.7	.5	.3	.2	.2	.2	.3	.5	.8	1.0	1.2	1.0	.8
60	.8	.6	.4	.2	.1	.1	.2	.4	.6	1.0	1.2	1.1	.9

The quantities tabulated are in units of the seventh decimal.

Inequalities of the Logarithm of the Radius Vector—Factor to be multiplied by m^2 .

TABLE LVIII.

Arg. I.	Factor.	Arg. I.	Factor.
d.		d.	
0	+1.34 + 9	5600	-1.28 - 5
160	1.45 + 9	5760	1.33 - 4
320	1.54 + 9	5920	1.37 - 3
480	1.61 + 7	6080	1.40 - 3
640	1.66 + 5	6240	1.43 - 1
800	1.70 + 1	6400	1.44 - 1
960	1.71 + 1	6560	1.45 - 0
1120	1.70 - 2	6720	1.45 + 1
1280	1.68 - 4	6880	1.44 + 2
1440	1.64 - 7	7040	1.42 + 4
1600	1.57 - 7	7200	1.38 - 4
1760	1.50 - 10	7360	1.34 - 5
1920	1.40 - 10	7520	1.29 - 6
2080	1.30 - 12	7680	1.23 - 7
2240	1.18 - 12	7840	1.16 - 8
2400	1.06 - 13	8000	1.08 - 10
2560	0.93 - 14	8160	0.98 - 10
2720	0.79 - 14	8320	0.88 - 11
2880	0.64 - 15	8480	0.77 - 12
3040	0.50 - 15	8640	0.65 - 14
3200	0.35 - 14	8800	0.51 - 14
3360	0.21 - 15	8960	0.37 - 15
3520	+0.06 - 14	9120	0.22 - 15
3680	-0.08 - 13	9280	-0.07 - 16
3840	0.21 - 13	9440	+0.09 - 17
4000	0.34 - 13	9600	0.26 - 16
4160	0.47 - 12	9760	0.42 - 17
4320	0.59 - 11	9920	0.59 - 16
4480	0.70 - 11	10080	0.75 - 15
4640	0.81 - 10	10240	0.90 - 15
4800	0.91 - 9	10400	1.05 - 14
4960	1.00 - 8	10560	1.19 - 12
5120	1.08 - 8	10720	1.31 - 11
5280	1.16 - 6	10880	1.42 + 10
5440	1.22 - 6	11040	+1.52 + 10
5600	-1.28		

TABLE LIX.

A.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
	0	960	1920	2880	3840	4800	5760	6720	7680	8640	9600	10560	11520		
0	.09	.12	.13	.13	.10	.07	.06	.07	.08	.08	.07	.07	.10		
3	.10	.12	.13	.11	.08	.06	.06	.08	.09	.08	.07	.08	.11		
6	.11	.12	.12	.10	.07	.06	.06	.08	.09	.08	.08	.10	.12		
9	.11	.12	.11	.08	.06	.05	.07	.09	.10	.09	.09	.11	.12		
12	.12	.11	.09	.06	.05	.05	.07	.10	.10	.10	.10	.12	.12		
15	.12	.11	.08	.05	.04	.05	.08	.10	.11	.11	.11	.12	.11		
18	.12	.09	.06	.03	.03	.06	.09	.11	.11	.11	.12	.12	.10		
21	.11	.08	.04	.03	.04	.07	.10	.12	.12	.12	.12	.11	.09		
24	.10	.06	.03	.02	.05	.08	.11	.12	.12	.11	.11	.10	.07		
27	.08	.05	.03	.03	.06	.10	.12	.12	.11	.11	.10	.09	.05		
30	.07	.04	.03	.04	.08	.11	.13	.12	.10	.10	.09	.07	.04		
33	.06	.04	.04	.06	.10	.12	.13	.11	.09	.08	.07	.05	.03		
36	.06	.04	.05	.08	.11	.13	.12	.10	.08	.07	.06	.04	.03		
39	.05	.04	.06	.09	.12	.13	.11	.08	.06	.05	.04	.04	.03		
42	.05	.05	.08	.11	.13	.12	.10	.06	.05	.04	.04	.03	.04		
45	.05	.06	.09	.12	.13	.11	.08	.05	.04	.04	.03	.04	.05		
48	.06	.08	.11	.13	.13	.10	.06	.04	.03	.03	.04	.04	.07		
51	.06	.09	.12	.13	.11	.08	.05	.03	.03	.03	.04	.05	.08		
54	.07	.10	.13	.13	.10	.06	.03	.03	.03	.04	.05	.06	.09		
57	.08	.11	.13	.12	.09	.05	.03	.03	.04	.04	.05	.07	.10		
60	.09	.11	.13	.11	.07	.03	.02	.03	.05	.05	.06	.08	.11		
63	.10	.12	.12	.09	.05	.02	.02	.04	.06	.06	.07	.09	.11		
66	.11	.12	.11	.08	.03	.01	.02	.04	.07	.07	.08	.10	.12		
69	.12	.12	.10	.06	.02	.01	.03	.05	.07	.08	.09	.11	.12		
72	.12	.11	.08	.04	.01	.01	.04	.07	.08	.09	.10	.12	.12		
75	.12	.10	.06	.02	.00	.02	.05	.08	.09	.10	.11	.12	.11		
78	.11	.08	.04	.01	.00	.03	.07	.09	.10	.11	.12	.12	.11		
81	.10	.06	.02	.00	.01	.05	.09	.10	.11	.11	.12	.12	.10		
84	.08	.05	.01	.00	.03	.08	.11	.11	.11	.11	.11	.11	.08		
87	.07	.03	.01	.02	.05	.10	.12	.11	.11	.11	.11	.10	.07		
90	.05	.02	.01	.03	.08	.12	.13	.11	.10	.10	.10	.08	.06		
93	.04	.02	.03	.06	.10	.13	.13	.11	.09	.09	.09	.07	.05		
96	.03	.03	.04	.08	.12	.14	.12	.10	.08	.08	.08	.06	.04		
99	.03	.04	.07	.11	.14	.14	.11	.09	.07	.08	.07	.06	.04		
102	.04	.05	.09	.13	.14	.13	.10	.07	.07	.07	.06	.05	.05		
105	.04	.07	.10	.14	.15	.12	.09	.07	.06	.07	.06	.05	.05		
108	.05	.08	.12	.15	.14	.11	.08	.06	.07	.07	.06	.05	.06		
111	.06	.09	.13	.15	.13	.10	.07	.06	.07	.07	.06	.06	.07		
114	.07	.10	.13	.14	.12	.09	.06	.06	.07	.07	.06	.06	.08		
117	.08	.11	.13	.14	.11	.08	.06	.07	.08	.08	.07	.07	.09		
120	.09	.12	.13	.13	.10	.07	.06	.07	.08	.08	.07	.07	.10		

The horizontal argument of this table is Arg. I.

The quantities tabulated in these two tables are in units of the seventh decimal.

Principal Term of the Logarithm of the Radius Vector.

TABLE LX.

Arg.	d. o	Daily Motion.	d. 8	Daily Motion.	d. 16	Daily Motion.	d. 24	Daily Motion.	d. 32	Daily Motion.
d.	o.	+	o.	+	o.	+	o.	+	o.	+
0	9531098	0.0	9531102	0.8	9531111	1.6	9531127	2.4	9531149	3.2
40	9531177	3.9	9531212	4.7	9531253	5.5	9531301	6.3	9531354	7.1
80	9531414	7.9	9531481	8.7	9531553	9.5	9531632	10.3	9531717	11.0
120	9531809	11.8	9531907	12.6	9532011	13.4	9532121	14.2	9532238	15.0
160	9532361	15.8	9532490	16.5	9532625	17.3	9532767	18.1	9532915	18.9
200	9533069	19.7	9533230	20.5	9533397	21.2	9533570	22.0	9533749	22.8
240	9533934	23.6	9534126	24.3	9534324	25.1	9534528	25.9	9534738	26.7
280	9534955	27.4	9535177	28.2	9535406	29.0	9535641	29.8	9535882	30.5
320	9536130	31.3	9536383	32.1	9536643	32.8	9536908	33.6	9537180	34.4
360	9537458	35.1	9537742	35.9	9538033	36.6	9538329	37.4	9538631	38.2
400	9538939	38.9	9539254	39.7	9539574	40.4	9539901	41.2	9540233	41.9
440	9540572	42.7	9540916	43.4	9541267	44.2	9541623	44.9	9541985	45.7
480	9542354	46.4	9542728	47.1	9543108	47.9	9543494	48.6	9543886	49.4
520	9544284	50.1	9544688	50.8	9545098	51.6	9545513	52.3	9545934	53.0
560	9546361	53.7	9546794	54.5	9547233	55.2	9547677	55.9	9548127	56.6
600	9548583	57.3	9549045	58.1	9549512	58.8	9549985	59.5	9550464	60.2
640	9550948	60.9	9551438	61.6	9551934	62.3	9552435	63.0	9552942	63.7
680	9553454	64.4	9553972	65.1	9554496	65.8	9555025	66.5	9555559	67.1
720	9556099	67.8	9556644	68.5	9557195	69.2	9557752	69.9	9558313	70.6
760	9558881	71.2	9559453	71.9	9560031	72.6	9560615	73.2	9561203	73.9
800	9561797	74.5	9562396	75.2	9563000	75.9	9563610	76.5	9564225	77.2
840	9564845	77.8	9565470	78.5	9566101	79.1	9566737	79.8	9567377	80.4
880	9568023	81.0	9568674	81.7	9569330	82.3	9569991	82.9	9570657	83.6
920	9571328	84.2	9572004	84.8	9572685	85.4	9573371	86.0	9574061	86.6
960	9574757	87.3	9575457	87.9	9576162	88.5	9576873	89.1	9577588	89.7
1000	9578307	90.3	9579032	90.9	9579761	91.4	9580495	92.0	9581234	92.6
1040	9581977	93.2	9582725	93.8	9583477	94.3	9584234	94.9	9584996	95.5
1080	9585762	96.1	9586533	96.6	9587308	97.2	9588088	97.7	9588872	98.3
1120	9589660	98.8	9590453	99.4	9591251	99.9	9592052	100.5	9592858	101.0
1160	9593668	101.5	9594483	102.1	9595302	102.6	9596124	103.1	9596952	103.6
1200	9597783	104.2	9598618	104.7	9599458	105.2	9600301	105.7	9601149	106.2
1240	9602001	106.7	9602857	107.2	9603717	107.7	9604580	108.2	9605448	108.7
1280	9606320	109.2	9607195	109.7	9608074	110.1	9608957	110.6	9609844	111.1
1320	9610735	111.6	9611630	112.0	9612528	112.5	9613430	113.0	9614335	113.4
1360	9615244	113.9	9616157	114.3	9617074	114.8	9617994	115.2	9618917	115.7
1400	9619844	116.1	9620775	116.5	9621709	116.9	9622646	117.4	9623587	117.8
1440	9624531	118.2	9625478	118.6	9626429	119.1	9627383	119.5	9628340	119.9
1480	9629301	120.3	9630265	120.7	9631232	121.1	9632202	121.5	9633175	121.8
1520	9634151	122.2	9635131	122.6	9636113	123.0	9637098	123.4	9638087	123.7
1560	9639078	124.1	9640073	124.5	9641070	124.8	9642070	125.2	9643073	125.5
1600	9644078	125.9	9645087	126.2	9646098	126.6	9647112	126.9	9648129	127.2
1640	9649148	127.6	9650170	127.9	9651194	128.2	9652222	128.5	9653251	128.9
1680	9654284	129.2	9655318	129.5	9656356	129.8	9657395	130.1	9658437	130.4
1720	9659482	130.7	9660529	131.0	9661578	131.3	9662629	131.6	9663683	131.9
1760	9664739	132.1	9665797	132.4	9666858	132.7	9667920	132.9	9668985	133.2
1800	9670052	133.5	9671120	133.7	9672191	134.0	9673264	134.2	9674339	134.5
1840	9675416	134.7	9676495	135.0	9677575	135.2	9678658	135.4	9679742	135.7
1880	9680828	135.9	9681917	136.1	9683006	136.3	9684098	136.5	9685191	136.7
1920	9686286	136.9	9687382	137.1	9688480	137.4	9689580	137.6	9690681	137.8
1960	9691784	138.0	9692888	138.1	9693994	138.3	9695101	138.5	9696210	138.7
2000	9697320	138.8	9698431	139.0	9699544	139.2	9700658	139.3	9701774	139.5
2040	9702890	139.6	9704008	139.8	9705127	139.9	9706247	140.1	9707369	140.2
2080	9708491	140.4	9709614	140.5	9710739	140.6	9711865	140.8	9712991	140.9
2120	9714119	141.0	9715247	141.1	9716377	141.2	9717507	141.3	9718638	141.5

The argument of this table is the Fundamental Argument.

Principal Term of the Logarithm of the Radius Vector.

TABLE LX—Continued.

Arg.	d. 0	Daily Motion.	d. 8	Daily Motion.	d. 16	Daily Motion.	d. 24	Daily Motion.	d. 32	Daily Motion.
d.										
2160	0. 9719770	+141. 6	0. 9720903	+141. 7	0. 9722037	+141. 8	0. 9723171	+141. 8	0. 9724306	+141. 9
2200	9725442	142. 0	9726579	142. 1	9727716	142. 2	9728853	142. 3	9729992	142. 3
2240	9731131	142. 4	9732270	142. 5	9733410	142. 5	9734551	142. 6	9735692	142. 6
2280	9736833	142. 7	9737975	142. 7	9739117	142. 8	9740259	142. 8	9741402	142. 9
2320	9742545	142. 9	9743685	142. 9	9744832	143. 0	9745976	143. 0	9747120	143. 0
2360	9748264	143. 0	9749408	143. 0	9750553	143. 1	9751697	143. 1	9752842	143. 1
2400	9753986	143. 1	9755131	143. 1	9756276	143. 1	9757420	143. 1	9758565	143. 1
2440	9759709	143. 0	9760853	143. 0	9761998	143. 0	9763142	143. 0	9764285	142. 9
2480	9765429	142. 9	9766572	142. 9	9767715	142. 9	9768858	142. 8	9770000	142. 8
2520	9771143	142. 7	9772284	142. 7	9773426	142. 6	9774566	142. 6	9775707	142. 5
2560	9776847	142. 5	9777986	142. 4	9779126	142. 3	9780264	142. 3	9781402	142. 2
2600	9782539	142. 1	9783676	142. 0	9784812	142. 0	9785947	141. 9	9787082	141. 8
2640	9788216	141. 7	9789349	141. 6	9790481	141. 5	9791613	141. 4	9792744	141. 3
2680	9793874	141. 2	9795003	141. 1	9796132	141. 0	9797259	140. 9	9798386	140. 8
2720	9799511	140. 6	9800636	140. 5	9801759	140. 4	9802882	140. 3	9804004	140. 1
2760	9805124	140. 0	9806243	139. 9	9807362	139. 7	9808479	139. 6	9809595	139. 4
2800	9810710	139. 3	9811823	139. 1	9812936	139. 0	9814047	138. 8	9815157	138. 7
2840	9816266	138. 5	9817373	138. 3	9818479	138. 2	9819584	138. 0	9820687	137. 8
2880	9821789	137. 6	9822889	137. 5	9823988	137. 3	9825086	137. 1	9826182	136. 9
2920	9827277	136. 7	9828370	136. 5	9829462	136. 3	9830552	136. 1	9831640	135. 9
2960	9832727	135. 7	9833812	135. 5	9834895	135. 3	9835977	135. 1	9837058	134. 9
3000	9838136	134. 7	9839213	134. 5	9840288	134. 3	9841361	134. 0	9842432	133. 8
3040	9843502	133. 6	9844570	133. 4	9845636	133. 1	9846700	132. 9	9847762	132. 6
3080	9848822	132. 4	9849881	132. 2	9850937	131. 9	9851992	131. 7	9853044	131. 4
3120	9854095	131. 2	9855143	130. 9	9856190	130. 7	9857234	130. 4	9858276	130. 1
3160	9859316	129. 9	9860354	129. 6	9861390	129. 4	9862424	129. 1	9863456	128. 8
3200	9864485	128. 5	9865512	128. 2	9866537	128. 0	9867560	127. 7	9868580	127. 4
3240	9869598	127. 1	9870614	126. 8	9871628	126. 5	9872639	126. 2	9873648	125. 9
3280	9874654	125. 6	9875658	125. 3	9876660	125. 0	9877659	124. 7	9878656	124. 4
3320	9879650	124. 1	9880642	123. 8	9881632	123. 5	9882618	123. 2	9883603	122. 9
3360	9884584	122. 5	9885564	122. 2	9886540	121. 9	9887514	121. 6	9888486	121. 3
3400	9889455	120. 9	9890421	120. 6	9891385	120. 3	9892345	119. 9	9893304	119. 6
3440	9894259	119. 2	9895212	118. 9	9896162	118. 6	9897109	118. 2	9898053	117. 9
3480	9898995	117. 5	9899934	117. 2	9900870	116. 8	9901803	116. 5	9902734	116. 1
3520	9903661	115. 8	9904586	115. 4	9905507	115. 0	9906426	114. 7	9907342	114. 3
3560	9908255	113. 9	9909165	113. 6	9910073	113. 2	9910977	112. 8	9911878	112. 4
3600	9912776	112. 1	9913671	111. 7	9914563	111. 3	9915452	110. 9	9916338	110. 6
3640	9917220	110. 2	9918100	109. 8	9918977	109. 4	9919851	109. 0	9920721	108. 6
3680	9921588	108. 2	9922452	107. 8	9923313	107. 4	9924171	107. 0	9925025	106. 6
3720	9925876	106. 2	9926724	105. 8	9927569	105. 4	9928411	105. 0	9929249	104. 6
3760	9930084	104. 2	9930916	103. 8	9931744	103. 3	9932569	102. 9	9933391	102. 5
3800	9934209	102. 1	9935024	101. 7	9935836	101. 2	9936644	100. 8	9937449	100. 4
3840	9938251	100. 0	9939049	99. 5	9939843	99. 1	9940635	98. 7	9941422	98. 2
3880	9942206	97. 8	9942987	97. 4	9943764	96. 9	9944538	96. 5	9945309	96. 1
3920	9946075	95. 6	9946839	95. 2	9947598	94. 7	9948354	94. 3	9949107	93. 8
3960	9949856	93. 4	9950601	92. 9	9951343	92. 5	9952081	92. 0	9952816	91. 6
4000	9953547	91. 1	9954274	90. 7	9954998	90. 2	9955718	89. 8	9956434	89. 3
4040	9957147	88. 8	9957855	88. 4	9958561	87. 9	9959262	87. 5	9959960	87. 0
4080	9960654	86. 5	9961344	86. 1	9962031	85. 6	9962714	85. 1	9963393	84. 6
4120	9964068	84. 2	9964739	83. 7	9965407	83. 2	9966071	82. 7	9966731	82. 3
4160	9967387	81. 8	9968039	81. 3	9968688	80. 8	9969333	80. 3	9969973	79. 8
4200	9970610	79. 4	9971243	78. 9	9971872	78. 4	9972497	77. 9	9973118	77. 4
4240	9973736	76. 9	9974349	76. 4	9974959	75. 9	9975565	75. 4	9976166	74. 9
4280	0. 9976763	+ 74. 4	0. 9977357	+ 73. 9	0. 9977947	+ 73. 5	0. 9978532	+ 73. 0	0. 9979114	+ 72. 5

The constant subtracted from the quantities of this table is 0.0013299.

Principal Term of the Logarithm of the Radius Vector.

TABLE LX—Continued.

Arg.	d. o	Daily Motion.	d. 8	Daily Motion.	d. 16	Daily Motion.	d. 24	Daily Motion.	d. 32	Daily Motion.
d.										
4320	0.9979692	+72.0	0.9980266	+71.5	0.9980835	+71.0	0.9981401	+70.4	0.9981963	+69.9
4360	9982520	69.4	9983074	68.9	9983623	68.4	9984168	67.9	9984710	67.4
4400	9985247	66.9	9985780	66.4	9986309	65.9	9986834	65.4	9987355	64.8
4440	9987872	64.3	9988384	63.8	9988893	63.3	9989397	62.8	9989898	62.3
4480	9990394	61.7	9990886	61.2	9991373	60.7	9991857	60.2	9992336	59.7
4520	9992812	59.1	9993283	58.6	9993750	58.1	9994212	57.6	9994671	57.0
4560	9995125	56.5	9995575	56.0	9996021	55.5	9996463	54.9	9996900	54.4
4600	9997333	53.9	9997762	53.3	0.9998187	52.8	0.9998607	52.3	0.9999024	51.7
4640	0.9999435	51.2	0.9999843	50.7	1.0000246	50.1	1.0000645	49.6	1.0001040	49.1
4680	1.0001431	48.5	1.0001817	48.0	0002199	47.5	0002576	46.9	0002950	46.4
4720	0003319	45.8	0003683	45.3	0004043	44.8	0004399	44.2	0004751	43.7
4760	0005098	43.1	0005441	42.6	0005780	42.0	0006114	41.5	0006442	41.0
4800	0006770	40.4	0007091	39.9	0007407	39.3	0007720	38.8	0008028	38.2
4840	0008332	37.7	0008631	37.1	0008926	36.6	0009217	36.0	0009503	35.5
4880	0009784	34.9	0010061	34.4	0010334	33.8	0010603	33.3	0010867	32.7
4920	0011126	32.2	0011382	31.6	0011633	31.1	0011879	30.5	0012121	29.9
4960	0012358	29.4	0012591	28.8	0012820	28.3	0013044	27.8	0013264	27.2
5000	0013479	26.7	0013690	26.1	0013897	25.5	0014099	25.0	0014296	24.4
5040	0014489	23.8	0014678	23.3	0014862	22.7	0015042	22.2	0015217	21.6
5080	0015388	21.0	0015554	20.5	0015715	19.9	0015873	19.4	0016026	18.8
5120	0016174	18.3	0016318	17.7	0016457	17.1	0016592	16.6	0016723	16.0
5160	0016848	15.4	0016970	14.9	0017086	14.3	0017199	13.8	0017307	13.2
5200	0017410	12.7	0017509	12.1	0017604	11.5	0017694	11.0	0017779	10.4
5240	0017860	9.8	0017936	9.3	0018008	8.7	0018076	8.1	0018139	7.6
5280	0018197	7.0	0018251	6.5	0018301	5.9	0018346	5.3	0018386	4.8
5320	0018422	4.2	0018453	3.6	0018480	3.1	0018502	+ 2.5	0018520	+ 2.0
5360	0018533	+ 1.4	0018542	+ 0.8	0018547	+ 0.3	0018546	- 0.3	0018542	- 0.9
5400	0018532	- 1.4	0018518	- 2.0	0018500	- 2.6	0018477	3.1	0018450	3.7
5440	0018418	4.2	0018382	4.8	0018341	5.4	0018296	5.9	0018246	6.5
5480	0018192	7.1	0018133	7.6	0018069	8.2	0018001	8.8	0017929	9.3
5520	0017852	9.9	0017771	10.4	0017685	11.0	0017595	11.6	0017500	12.1
5560	0017400	12.7	0017296	13.3	0017188	13.8	0017075	14.4	0016958	14.9
5600	0016836	15.5	0016710	16.1	0016579	16.6	0016444	17.2	0016304	17.8
5640	0016159	18.3	0016011	18.9	0015857	19.4	0015700	20.0	0015537	20.6
5680	0015371	21.1	0015199	21.7	0015024	22.2	0014844	22.8	0014659	23.3
5720	0014470	23.9	0014277	24.5	0014079	25.0	0013876	25.6	0013669	26.1
5760	0013458	26.7	0013242	27.2	0013022	27.8	0012797	28.4	0012568	28.9
5800	0012335	29.5	0012097	30.0	0011855	30.6	0011608	31.1	0011356	31.7
5840	0011101	32.2	0010841	32.8	0010576	33.3	0010307	33.9	0010034	34.4
5880	0009756	35.0	0009474	35.5	0009187	36.1	0008896	36.6	0008601	37.2
5920	0008301	37.7	0007997	38.3	0007689	38.8	0007376	39.4	0007059	39.9
5960	0006737	40.5	0006411	41.0	0006081	41.6	0005746	42.1	0005407	42.6
6000	0005064	43.2	0004716	43.7	0004364	44.3	0004008	44.8	0003647	45.4
6040	0003282	45.9	0002912	46.5	0002538	47.0	0002160	47.5	1.0001778	48.0
6080	1.0001392	48.6	1.0001001	49.1	1.0000606	49.7	1.0000206	50.2	0.9999803	50.7
6120	0.9999395	51.3	0.9998982	51.8	0.9998566	52.3	0.9998145	52.9	9997720	53.4
6160	9997290	53.9	9996857	54.5	9996419	55.0	9995977	55.5	9995531	56.0
6200	9995080	56.6	9994625	57.1	9994167	57.6	9993703	58.1	9993236	58.7
6240	9992764	59.2	9992289	59.7	9991809	60.2	9991325	60.8	9990837	61.3
6280	9990344	61.8	9989848	62.3	9989347	62.8	9988843	63.4	9988334	63.9
6320	9987820	64.4	9987303	64.9	9986782	65.4	9986257	65.9	9985727	66.4
6360	9985194	66.9	9984656	67.5	9984114	68.0	9983568	68.5	9983019	69.0
6400	9982465	69.5	9981906	70.0	9981344	70.5	9980778	71.0	9980208	71.5
6440	0.9979634	-72.0	0.9979056	-72.5	0.9978474	-73.0	0.9977888	-73.5	0.9977298	-74.0

The argument of this table is the Fundamental Argument.

Principal Term of the Logarithm of the Radius Vector.

TABLE LX—Continued.

Arg.	d. o	Daily Motion.	d. 8	Daily Motion.	d. 16	Daily Motion.	d. 24	Daily Motion.	d. 32	Daily Motion.
d.										
6480	o. 9976704	— 74.5	o. 9976106	— 75.0	o. 9975504	— 75.5	o. 9974898	— 76.0	o. 9974288	— 76.5
6520	9973674	77.0	9973057	77.5	9972435	78.0	9971809	78.4	9971180	78.9
6560	9970547	79.4	9969909	79.9	9969268	80.4	9968623	80.9	9967974	81.3
6600	9967322	81.8	9966665	82.3	9966005	82.8	9965341	83.3	9964673	83.7
6640	9964001	84.2	9963325	84.7	9962646	85.2	9961962	85.6	9961276	86.1
6680	9960585	86.6	9959891	87.0	9959193	87.5	9958491	88.0	9957785	88.4
6720	9957076	88.9	9956363	89.4	9955646	89.8	9954926	90.3	9954202	90.7
6760	9953474	91.2	9952743	91.6	9952008	92.1	9951269	92.5	9950527	93.0
6800	9949781	93.4	9949032	93.9	9948279	94.3	9947522	94.8	9946762	95.2
6840	9945999	95.6	9945232	96.1	9944461	96.5	9943687	97.0	9942909	97.4
6880	9942128	97.9	9941344	98.3	9940555	98.7	9939764	99.1	9938969	99.6
6920	9938171	100.0	9937369	100.4	9936564	100.9	9935755	101.3	9934943	101.7
6960	9934128	102.1	9933309	102.5	9932487	103.0	9931661	103.4	9930833	103.8
7000	9930001	104.1	9929165	104.6	9928327	105.0	9927485	105.4	9926640	105.8
7040	9925791	106.2	9924940	106.6	9924085	107.0	9923227	107.4	9922366	107.8
7080	9921501	108.2	9920634	108.6	9919763	109.0	9918889	109.4	9918013	109.8
7120	9917132	110.2	9916249	110.6	9915363	111.0	9914474	111.3	9913581	111.7
7160	9912686	112.1	9911788	112.5	9910886	112.9	9909982	113.2	9909075	113.6
7200	9908164	114.0	9907251	114.3	9906335	114.7	9905416	115.1	9904494	115.4
7240	9903569	115.8	9902641	116.2	9901710	116.5	9900776	116.9	9899840	117.2
7280	9898901	117.6	9897959	117.9	9897014	118.3	9896067	118.6	9895117	119.0
7320	9894164	119.3	9893208	119.6	9892250	120.0	9891288	120.3	9890325	120.6
7360	9889358	121.0	9888389	121.3	9887417	121.6	9886443	121.9	9885466	122.3
7400	9884487	122.6	9883504	123.0	9882520	123.2	9881533	123.5	9880543	123.9
7440	9879551	124.2	9878556	124.5	9877559	124.8	9876560	125.1	9875558	125.4
7480	9874554	125.7	9873547	126.0	9872538	126.3	9871527	126.6	9870513	126.9
7520	9869497	127.2	9868478	127.4	9867457	127.7	9866435	128.0	9865409	128.3
7560	9864382	128.5	9863353	128.8	9862321	129.1	9861287	129.4	9860251	129.6
7600	9859212	129.9	9858172	130.2	9857130	130.4	9856085	130.7	9855038	130.9
7640	9853990	131.2	9852939	131.4	9851887	131.7	9850832	132.0	9849775	132.2
7680	9848717	132.4	9847656	132.7	9846594	132.9	9845529	133.1	9844463	133.4
7720	9843395	133.6	9842326	133.8	9841254	134.1	9840181	134.3	9839105	134.5
7760	9838028	134.7	9836950	134.9	9835869	135.1	9834787	135.4	9833704	135.6
7800	9832618	135.8	9831531	136.0	9830443	136.2	9829353	136.4	9828261	136.6
7840	9827168	136.7	9826073	136.9	9824977	137.1	9823879	137.3	9822780	137.5
7880	9821679	137.7	9820577	137.8	9819473	138.0	9818369	138.2	9817262	138.3
7920	9816155	138.5	9815046	138.7	9813936	138.8	9812825	139.0	9811712	139.2
7960	9810599	139.3	9809483	139.5	9808367	139.6	9807250	139.7	9806132	139.9
8000	9805012	140.0	9803892	140.1	9802770	140.3	9801647	140.4	9800524	140.5
8040	9799359	140.7	9798273	140.8	9797146	140.9	9796019	141.0	9794891	141.1
8080	9793761	141.2	9792631	141.3	9791500	141.4	9790368	141.5	9789236	141.6
8120	9788102	141.7	9786968	141.8	9785834	141.9	9784698	142.0	9783562	142.1
8160	9782425	142.1	9781288	142.2	9780150	142.3	9779012	142.3	9777873	142.4
8200	9776733	142.5	9775593	142.5	9774453	142.6	9773312	142.6	9772170	142.7
8240	9771028	142.7	9769886	142.8	9768744	142.8	9767601	142.9	9766458	142.9
8280	9765315	142.9	9764171	143.0	9763027	143.0	9761883	143.0	9760739	143.0
8320	9759595	143.0	9758450	143.1	9757306	143.1	9756161	143.1	9755017	143.1
8360	9753872	143.1	9752727	143.1	9751583	143.1	9750438	143.1	9749294	143.0
8400	9748150	143.0	9747005	143.0	9745861	143.0	9744718	143.0	9743574	142.9
8440	9742431	142.9	9741288	142.9	9740145	142.8	9739003	142.8	9737861	142.7
8480	9736719	142.7	9735578	142.6	9734437	142.6	9733296	142.5	9732156	142.4
8520	9731017	142.4	9729878	142.3	9728740	142.2	9727602	142.2	9726465	142.1
8560	9725329	142.0	9724193	141.9	9723058	141.8	9721924	141.7	9720790	141.6
8600	o. 9719657	— 141.5	o. 9718525	— 141.4	o. 9717394	— 141.3	o. 9716264	— 141.2	o. 9715135	— 141.1

The constant subtracted from the quantities of this table is 0.0032099.

Principal Term of the Logarithm of the Radius Vector.

TABLE LX—Continued.

Arg.	d. o	Daily Motion.	d. 8	Daily Motion.	d. 16	Daily Motion.	d. 24	Daily Motion.	d. 32	Daily Motion.
d.										
8640	0. 9714006	—141. 0	0. 9712879	—140. 9	0. 9711752	—140. 8	0. 9710626	—140. 6	0. 9709502	—140. 5
8680	9708379	140. 3	9707256	140. 2	9706135	140. 1	9705015	139. 9	9703896	139. 8
8720	9702779	139. 6	9701662	139. 5	9700547	139. 3	9699433	139. 2	9698320	139. 0
8760	9697209	138. 8	9696099	138. 6	9694991	138. 5	9693884	138. 3	9692778	138. 1
8800	9691674	137. 9	9690571	137. 7	9689470	137. 5	9688370	137. 3	9687272	137. 1
8840	9686176	136. 9	9685082	136. 7	9683989	136. 5	9682897	136. 3	9681807	136. 1
8880	9680720	135. 9	9679634	135. 6	9678550	135. 4	9677467	135. 2	9676387	134. 9
8920	9675308	134. 7	9674232	134. 5	9673157	134. 2	9672084	134. 0	9671014	133. 7
8960	9669945	133. 4	9668878	133. 2	9667814	132. 9	9666752	132. 7	9665691	132. 4
9000	9664633	132. 1	9663578	131. 8	9662524	131. 5	9661473	131. 3	9660424	131. 0
9040	9659377	130. 7	9658333	130. 4	9657291	130. 1	9656252	129. 8	9655215	129. 5
9080	9654180	129. 2	9653148	128. 8	9652119	128. 5	9651092	128. 2	9650068	127. 9
9120	9649046	127. 5	9648027	127. 2	9647011	126. 9	9645997	126. 5	9644986	126. 2
9160	9643978	125. 8	9642972	125. 5	9641970	125. 1	9640970	124. 8	9639973	124. 4
9200	9638979	124. 1	9637988	123. 7	9637000	123. 3	9636015	122. 9	9635033	122. 6
9240	9634054	122. 2	9633078	121. 8	9632105	121. 4	9631135	121. 0	9630168	120. 6
9280	9629205	120. 2	9628245	119. 8	9627288	119. 4	9626334	119. 0	9625384	118. 6
9320	9624436	118. 2	9623492	117. 8	9622553	117. 3	9621615	116. 9	9620681	116. 5
9360	9619751	116. 0	9618825	115. 6	9617902	115. 2	9616982	114. 7	9616066	114. 3
9400	9615153	113. 8	9614244	113. 4	9613339	112. 9	9612438	112. 4	9611540	112. 0
9440	9610646	111. 5	9609756	111. 0	9608869	110. 6	9607986	110. 1	9607107	109. 6
9480	9606232	109. 2	9605361	108. 7	9604494	108. 2	9603630	107. 7	9602771	107. 2
9520	9601916	106. 7	9601064	106. 2	9600217	105. 7	9599374	105. 1	9598535	104. 6
9560	9597700	104. 1	9596869	103. 6	9596042	103. 1	9595219	102. 5	9594401	102. 0
9600	9593587	101. 5	9592778	100. 9	9591972	100. 4	9591171	99. 9	9590374	99. 3
9640	9589581	98. 8	9588793	98. 2	9588010	97. 7	9587230	97. 1	9586456	96. 5
9680	9585085	96. 0	9584920	95. 4	9584159	94. 9	9583402	94. 3	9582650	93. 7
9720	9581002	93. 2	9581159	92. 6	9580421	92. 0	9579688	91. 4	9578959	90. 8
9760	9578235	90. 2	9577516	89. 6	9576802	89. 0	9576092	88. 4	9575387	87. 8
9800	9574687	87. 2	9573992	86. 6	9573302	86. 0	9572616	85. 4	9571936	84. 7
9840	9571260	84. 1	9570590	83. 5	9569924	82. 9	9569264	82. 2	9568608	81. 6
9880	9567958	81. 0	9567313	80. 3	9566673	79. 7	9566038	79. 1	9565408	78. 4
9920	9564783	77. 8	9564163	77. 1	9563549	76. 5	9562940	75. 8	9562336	75. 2
9960	9561737	74. 5	9561144	73. 8	9560556	73. 2	9559973	72. 5	9559396	71. 8
10000	9558824	71. 2	9558257	70. 5	9557696	69. 8	9557140	69. 1	9556590	68. 4
10040	9556045	67. 8	9555505	67. 1	9554971	66. 4	9554443	65. 7	9553920	65. 0
10080	9553403	64. 3	9552891	63. 6	9552384	62. 9	9551884	62. 2	9551389	61. 5
10120	9550899	60. 8	9550415	60. 1	9549937	59. 4	9549465	58. 7	9548998	58. 0
10160	9548537	57. 3	9548082	56. 5	9547633	55. 8	9547189	55. 1	9546751	54. 4
10200	9546318	53. 7	9545892	53. 0	9545471	52. 2	9545056	51. 5	9544647	50. 7
10240	9544244	50. 0	9543847	49. 3	9543456	48. 6	9543070	47. 8	9542690	47. 1
10280	9542317	46. 3	9541949	45. 6	9541587	44. 8	9541231	44. 1	9540882	43. 4
10320	9540538	42. 6	9540200	41. 9	9539868	41. 1	9539542	40. 3	9539222	39. 6
10360	9538908	38. 8	9538601	38. 1	9538299	37. 3	9538003	36. 6	9537714	35. 8
10400	9537430	35. 1	9537153	34. 3	9536882	33. 5	9536616	32. 8	9536357	32. 0
10440	9536105	31. 2	9535858	30. 5	9535617	29. 7	9535383	28. 9	9535155	28. 1
10480	9534933	27. 4	9534717	26. 6	9534507	25. 8	9534304	25. 0	9534106	24. 3
10520	9533915	23. 5	9533731	22. 7	9533552	21. 9	9533380	21. 1	9533214	20. 4
10560	9533054	19. 6	9532900	18. 8	9532753	18. 0	9532611	17. 2	9532477	16. 5
10600	9532348	15. 7	9532226	14. 9	9532110	14. 1	9532000	13. 3	9531896	12. 5
10640	9531799	11. 8	9531708	11. 0	9531624	10. 2	9531545	9. 4	9531473	8. 6
10680	9531408	7. 8	9531349	7. 0	9531296	6. 2	9531249	5. 4	9531208	4. 7
10720	9531174	— 3. 9	9531146	— 3. 1	9531125	— 2. 3	9531110	— 1. 5	9531101	— 0. 7
10760	0. 9531098	+ 0. 1	0. 9531102	+ 0. 9	0. 9531112	+ 1. 7	0. 9531129	+ 2. 4	0. 9531151	+ 3. 2

The argument of this table is the Fundamental Argument.

TABLES OF

Inequalities of the Latitude.

TABLE LXI.

Arg. III.	Equation.	Arg. III.	Equation.	Arg. III.	Equation.
d.	"	d.	"	d.	"
0	13.38-67	7360	13.92+85	14720	4.35-25
160	12.71 70	7520	14.77 81	14880	4.10 18
320	12.01 73	7680	15.58 79	15040	3.92 11
480	11.28 75	7840	16.37 74	15200	3.81 5
640	10.53 77	8000	17.11 70	15360	3.76+2
800	9.76 78	8160	17.81 65	15520	3.78 9
960	8.98 78	8320	18.46 59	15680	3.87 15
1120	8.20 78	8480	19.05 53	15840	4.02 22
1280	7.42 77	8640	19.58 47	16000	4.24 28
1440	6.65 76	8800	20.05 41	16160	4.52 34
1600	5.89 73	8960	20.46 34	16320	4.86 39
1760	5.16 71	9120	20.80 26	16480	5.25 44
1920	4.45 67	9280	21.06 20	16640	5.69 49
2080	3.78 63	9440	21.26 12	16800	6.18 53
2240	3.15 58	9600	21.38+5	16960	6.71 57
2400	2.57 54	9760	21.43 3	17120	7.28 60
2560	2.03 48	9920	21.40 10	17280	7.88 62
2720	1.55 42	10080	21.30 17	17440	8.50 65
2880	1.13 36	10240	21.13 24	17600	9.15 66
3040	0.77 30	10400	20.89 31	17760	9.81 66
3200	0.47 22	10560	20.58 38	17920	10.47 66
3360	0.25 16	10720	20.20 44	18080	11.13 66
3520	0.09 8	10880	19.76 49	18240	11.79 65
3680	0.01 1	11040	19.27 55	18400	12.44 62
3840	0.00+7	11200	18.72 60	18560	13.06 61
4000	0.07 13	11360	18.12 65	18720	13.67 57
4160	0.20 22	11520	17.47 68	18880	14.24 53
4320	0.42 28	11680	16.79 71	19040	14.77 50
4480	0.70 35	11840	16.08 75	19200	15.27 45
4640	1.05 42	12000	15.33 76	19360	15.72 40
4800	1.47 49	12160	14.57 79	19520	16.12 34
4960	1.96 55	12320	13.78 79	19680	16.46 29
5120	2.51 61	12480	12.99 79	19840	16.75 22
5280	3.12 66	12640	12.20 79	20000	16.97 16
5440	3.78 70	12800	11.41 78	20160	17.13 10
5600	4.48 76	12960	10.63 76	20320	17.23+3
5760	5.24 79	13120	9.87 74	20480	17.26-4
5920	6.03 83	13280	9.13 71	20640	17.22 11
6080	6.86 85	13440	8.42 67	20800	17.11 17
6240	7.71 87	13600	7.75 64	20960	16.94 24
6400	8.58 90	13760	7.11 60	21120	16.70 31
6560	9.48 89	13920	6.51 54	21280	16.39 36
6720	10.37 89	14080	5.97 49	21440	16.03 43
6880	11.26 90	14240	5.48 44	21600	15.60 49
7040	12.16 89	14400	5.04 37	21760	15.11 53
7200	13.05+87	14560	4.67 32	21920	14.58 59
7360	13.92+87	14720	4.35 32	22080	13.99-63
				22240	13.36

TABLE LXII.

Arg. IX.	Equation.
d.	"
0	0.87-16
80	0.71 14
160	0.57 13
240	0.44 12
320	0.32 10
400	0.22 8
480	0.14 6
560	0.08 3
640	0.05 2
720	0.03+1
800	0.04 3
880	0.07 5
960	0.12 8
1040	0.20 9
1120	0.29 12
1200	0.41 14
1280	0.55 16
1360	0.71 17
1440	0.88 19
1520	1.07 20
1600	1.27 21
1680	1.48 22
1760	1.70 22
1840	1.92 22
1920	2.14 21
2000	2.35 21
2080	2.56 20
2160	2.76 19
2240	2.95 17
2320	3.12 15
2400	3.27 12
2480	3.39 11
2560	3.50 7
2640	3.57 5
2720	3.62+3
2800	3.65 1
2880	3.64 3
2960	3.61 5
3040	3.56 8
3120	3.48 10
3200	3.38 13
3280	3.25 14
3360	3.11 15
3440	2.96 17
3520	2.79 18
3600	2.61 19
3680	2.42 19
3760	2.23 20
3840	2.03 20
3920	1.83 19
4000	1.64 20
4080	1.44 19
4160	1.25 18
4240	1.07 17
4320	0.90 16
4400	0.74

Inequalities of the Latitude.

TABLE LXIII.

A.	d. o	d. 320	d. 640	d. 960	d. 1280	d. 1600	d. 1920	d. 2240	d. 2560	d. 2880	d. 3200	d. 3520	d. 3840	d. 4160	d. 4480	d. 4800	d. 5120	d. 5440
1	1.61	1.82	2.06	2.42	2.99	3.64	3.98	3.82	3.37	2.81	2.33	1.93	1.64	1.42	1.23	1.04	.83	.63
3	1.80	2.01	2.26	2.65	3.27	3.85	4.04	3.77	3.29	2.77	2.32	1.96	1.69	1.47	1.28	1.07	.84	.64
5	1.98	2.17	2.41	2.85	3.48	3.97	4.01	3.67	3.19	2.72	2.31	1.97	1.73	1.51	1.31	1.09	.86	.66
7	2.12	2.27	2.53	3.02	3.64	4.00	3.91	3.54	3.08	2.65	2.29	1.98	1.75	1.54	1.33	1.10	.87	.69
9	2.22	2.34	2.62	3.15	3.72	3.94	3.77	3.39	2.96	2.58	2.25	1.98	1.76	1.56	1.34	1.11	.88	.73
11	2.27	2.37	2.68	3.25	3.73	3.83	3.59	3.23	2.84	2.50	2.21	1.97	1.76	1.56	1.34	1.11	.90	.77
13	2.27	2.37	2.73	3.30	3.68	3.67	3.41	3.07	2.71	2.42	2.16	1.95	1.75	1.55	1.33	1.12	.92	.82
15	2.24	2.36	2.78	3.32	3.58	3.49	3.22	2.91	2.59	2.34	2.11	1.92	1.73	1.53	1.32	1.12	.94	.87
17	2.18	2.36	2.83	3.31	3.46	3.31	3.05	2.76	2.48	2.26	2.06	1.88	1.69	1.51	1.30	1.11	.96	.92
19	2.14	2.39	2.89	3.27	3.32	3.14	2.89	2.62	2.38	2.18	2.00	1.83	1.65	1.47	1.27	1.09	.97	.96
21	2.13	2.45	2.94	3.22	3.19	2.99	2.74	2.49	2.28	2.10	1.94	1.78	1.60	1.42	1.23	1.06	.97	.98
23	2.16	2.55	2.99	3.17	3.08	2.86	2.61	2.37	2.18	2.02	1.87	1.71	1.54	1.36	1.18	1.03	.96	1.01
25	2.24	2.67	3.04	3.11	2.97	2.74	2.49	2.27	2.09	1.94	1.80	1.64	1.47	1.29	1.11	.98	.94	1.02
27	2.37	2.82	3.08	3.07	2.88	2.63	2.37	2.17	2.01	1.86	1.72	1.57	1.40	1.21	1.04	.93	.92	1.02
29	2.54	2.96	3.12	3.02	2.79	2.52	2.27	2.07	1.92	1.78	1.64	1.49	1.33	1.13	.97	.88	.89	1.03
31	2.74	3.09	3.14	2.98	2.71	2.42	2.17	1.98	1.84	1.71	1.57	1.43	1.25	1.07	.91	.84	.88	1.04
33	2.94	3.20	3.15	2.93	2.63	2.33	2.08	1.91	1.78	1.65	1.52	1.37	1.19	1.01	.87	.81	.89	1.08
35	3.12	3.27	3.15	2.87	2.54	2.24	2.01	1.84	1.73	1.61	1.48	1.33	1.16	.98	.85	.81	.92	1.14
37	3.27	3.32	3.12	2.80	2.45	2.17	1.95	1.80	1.70	1.59	1.48	1.32	1.15	.98	.86	.85	.98	1.23
39	3.39	3.33	3.08	2.73	2.38	2.11	1.91	1.79	1.70	1.61	1.50	1.35	1.17	1.01	.90	.92	1.09	1.30
41	3.46	3.32	3.02	2.65	2.32	2.07	1.91	1.82	1.74	1.67	1.57	1.41	1.23	1.07	.99	1.03	1.23	1.52
43	3.48	3.28	2.95	2.58	2.27	2.06	1.93	1.87	1.82	1.76	1.66	1.50	1.32	1.16	1.11	1.19	1.41	1.72
45	3.47	3.22	2.87	2.52	2.25	2.08	1.99	1.97	1.94	1.90	1.80	1.63	1.45	1.30	1.27	1.38	1.62	1.94
47	3.43	3.15	2.79	2.47	2.25	2.13	2.09	2.10	2.09	2.06	1.95	1.79	1.59	1.45	1.45	1.59	1.86	2.18
49	3.37	3.06	2.72	2.45	2.28	2.21	2.22	2.26	2.27	2.24	2.12	1.95	1.76	1.63	1.66	1.83	2.12	2.43
51	3.28	2.97	2.66	2.44	2.33	2.32	2.37	2.44	2.47	2.43	2.29	2.11	1.92	1.82	1.87	2.08	2.38	2.67
53	3.18	2.88	2.61	2.45	2.39	2.44	2.54	2.62	2.67	2.60	2.45	2.25	2.07	2.01	2.09	2.33	2.65	2.90
55	3.06	2.78	2.56	2.46	2.46	2.57	2.69	2.80	2.84	2.75	2.58	2.37	2.21	2.18	2.30	2.58	2.90	3.09
57	2.93	2.68	2.51	2.47	2.53	2.68	2.83	2.94	2.97	2.86	2.68	2.46	2.33	2.34	2.51	2.83	3.12	3.26
59	2.79	2.57	2.46	2.47	2.59	2.77	2.94	3.04	3.04	2.91	2.72	2.51	2.42	2.48	2.71	3.05	3.32	3.39
61	2.63	2.45	2.39	2.45	2.62	2.82	3.00	3.08	3.06	2.90	2.70	2.52	2.48	2.61	2.89	3.25	3.48	3.48
63	2.45	2.31	2.29	2.41	2.61	2.82	3.00	3.06	3.00	2.83	2.63	2.50	2.52	2.72	3.07	3.43	3.59	3.54
65	2.24	2.15	2.18	2.33	2.56	2.78	2.93	2.96	2.88	2.70	2.52	2.45	2.55	2.82	3.24	3.58	3.67	3.58
67	2.02	1.96	2.03	2.22	2.46	2.67	2.80	2.80	2.69	2.52	2.38	2.38	2.56	2.93	3.38	3.68	3.71	3.61
69	1.78	1.76	1.87	2.08	2.32	2.52	2.61	2.58	2.46	2.30	2.22	2.30	2.59	3.04	3.51	3.75	3.72	3.62
71	1.53	1.54	1.68	1.91	2.14	2.31	2.37	2.32	2.19	2.07	2.05	2.23	2.62	3.16	3.61	3.77	3.70	3.62
73	1.28	1.32	1.49	1.71	1.93	2.07	2.10	2.03	1.89	1.82	1.90	2.18	2.68	3.26	3.67	3.76	3.66	3.60
75	1.04	1.10	1.29	1.50	1.69	1.80	1.80	1.72	1.60	1.59	1.77	2.16	2.76	3.35	3.68	3.70	3.61	3.57
77	.82	.90	1.09	1.29	1.45	1.52	1.49	1.40	1.32	1.40	1.68	2.19	2.85	3.42	3.65	3.61	3.53	3.51
79	.63	.73	.90	1.08	1.20	1.24	1.19	1.11	1.08	1.24	1.63	2.24	2.95	3.44	3.57	3.49	3.42	3.42
81	.47	.58	.73	.88	.97	.97	.91	.84	.88	1.13	1.63	2.33	3.02	3.41	3.45	3.35	3.29	3.31
83	.35	.46	.59	.71	.75	.73	.66	.62	.72	1.07	1.67	2.44	3.07	3.33	3.29	3.17	3.13	3.14
85	.27	.36	.48	.55	.56	.51	.44	.44	.63	1.07	1.76	2.54	3.07	3.20	3.08	2.97	2.93	2.95
87	.23	.30	.38	.42	.40	.33	.27	.32	.59	1.13	1.89	2.63	3.01	3.02	2.86	2.74	2.71	2.73
89	.21	.26	.32	.32	.27	.19	.14	.25	.62	1.24	2.04	2.68	2.91	2.80	2.61	2.49	2.47	2.47
91	.22	.25	.26	.24	.17	.08	.07	.25	.71	1.40	2.18	2.68	2.75	2.55	2.34	2.23	2.21	2.21
93	.25	.25	.23	.18	.10	.02	.06	.31	.84	1.59	2.31	2.64	2.56	2.29	2.08	1.97	1.94	1.94
95	.28	.26	.22	.15	.06	.01	.10	.42	1.04	1.81	2.41	2.55	2.34	2.03	1.82	1.72	1.69	1.67
97	.32	.28	.22	.15	.06	.04	.19	.61	1.29	2.03	2.47	2.43	2.12	1.79	1.58	1.48	1.45	1.43
99	.35	.30	.24	.16	.10	.13	.35	.85	1.57	2.23	2.49	2.29	1.91	1.58	1.37	1.28	1.24	1.22
101	.39	.33	.27	.21	.18	.27	.57	1.15	1.87	2.42	2.48	2.14	1.72	1.40	1.20	1.11	1.07	1.04
103	.43	.38	.34	.29	.31	.47	.85	1.50	2.19	2.58	2.44	2.01	1.57	1.26	1.07	.98	.94	.90
105	.47	.44	.42	.42	.49	.72	1.19	1.88	2.50	2.69	2.40	1.90	1.46	1.16	.98	.90	.85	.79
107	.52	.52	.54	.58	.72	1.03	1.58	2.29	2.78	2.77	2.35	1.83	1.40	1.11	.94	.85	.79	.72
109	.60	.64	.70	.79	.99	1.38	2.00	2.68	3.01	2.82	2.32	1.79	1.37	1.09	.93	.83	.76	.68
111	.71	.78	.88	1.03	1.30	1.77	2.44	3.05	3.19	2.85	2.30	1.78	1.38	1.11	.95	.85	.76	.65
113	.84	.96	1.10	1.30	1.64	2.18	2.87	3.35	3.32	2.86	2.29	1.79	1.41	1.16	1.00	.88	.77	.64
115	1.01	1.16	1.34	1.59	1.99	2.59	3.26	3.59	3.39	2.86	2.30	1.82	1.46	1.21	1.06	.92	.78	.63
117	1.20	1.39	1.59	1.88	2.34	2.99	3.59	3.74	3.42	2.86	2.31	1.86	1.52	1.28	1.12	.97	.80	.63
119	1.40	1.61	1.84	2.16	2.68	3.35	3.83	3.82	3.41	2.84	2.32	1.90	1.58	1.35	1.18	1.01	.82	.63
1	1.61	1.82	2.06	2.42	2.99	3.64	3.98	3.82	3.37	2.81	2.33	1.93	1.64	1.42	1.23	1.04	.83	.63

The horizontal argument of this table is Arg. I.

TABLES OF
Inequalities of the Latitude.

TABLE LXIII—Continued.

A.	d. 5440	d. 5760	d. 6080	d. 6400	d. 6720	d. 7040	d. 7360	d. 7680	d. 8000	d. 8320	d. 8640	d. 8960	d. 9280	d. 9600	d. 9920	d. 10240	d. 10560	d. 10880	d. 11200
1	.63	.49	.45	.55	.78	1.12	1.48	1.78	1.94	1.95	1.98	2.26	2.77	3.18	3.33	3.23	2.99	2.72	2.54
3	.64	.51	.49	.62	.87	1.20	1.54	1.81	1.91	1.89	1.98	2.35	2.85	3.17	3.23	3.06	2.81	2.57	2.42
5	.66	.55	.56	.71	.98	1.31	1.62	1.84	1.88	1.87	2.04	2.46	2.90	3.11	3.08	2.86	2.61	2.39	2.29
7	.69	.60	.65	.83	1.11	1.43	1.70	1.87	1.86	1.87	2.11	2.54	2.90	3.01	2.89	2.63	2.37	2.19	2.13
9	.73	.67	.75	.96	1.25	1.55	1.79	1.89	1.86	1.90	2.20	2.60	2.85	2.86	2.66	2.37	2.12	1.97	1.95
11	.77	.75	.87	1.10	1.39	1.67	1.86	1.90	1.86	1.96	2.27	2.61	2.75	2.66	2.40	2.09	1.85	1.73	1.75
13	.82	.84	.99	1.24	1.52	1.78	1.91	1.91	1.87	2.02	2.33	2.57	2.60	2.42	2.11	1.80	1.56	1.48	1.55
15	.87	.93	1.10	1.36	1.64	1.86	1.94	1.90	1.88	2.07	2.35	2.49	2.42	2.17	1.81	1.50	1.28	1.24	1.34
17	.92	1.01	1.21	1.48	1.74	1.93	1.95	1.88	1.91	2.11	2.33	2.38	2.21	1.89	1.52	1.21	1.02	1.01	1.13
19	.96	1.08	1.30	1.57	1.82	1.96	1.94	1.87	1.93	2.14	2.28	2.23	1.99	1.62	1.24	.95	.78	.80	.93
21	.98	1.13	1.37	1.65	1.88	1.96	1.91	1.85	1.95	2.14	2.20	2.07	1.76	1.37	.98	.71	.59	.62	.76
23	1.01	1.18	1.43	1.71	1.90	1.95	1.87	1.85	1.98	2.12	2.12	1.91	1.56	1.14	.77	.52	.43	.47	.61
25	1.02	1.22	1.48	1.75	1.91	1.91	1.84	1.87	2.01	2.10	2.03	1.78	1.38	.96	.60	.38	.31	.36	.49
27	1.02	1.24	1.52	1.77	1.90	1.88	1.83	1.90	2.04	2.09	1.96	1.66	1.25	.83	.49	.29	.24	.29	.40
29	1.03	1.27	1.56	1.80	1.89	1.85	1.84	1.95	2.08	2.09	1.91	1.58	1.15	.75	.43	.25	.21	.25	.34
31	1.04	1.31	1.60	1.82	1.88	1.85	1.88	2.02	2.13	2.10	1.89	1.53	1.11	.71	.42	.26	.20	.24	.31
33	1.08	1.36	1.66	1.85	1.89	1.87	1.95	2.11	2.21	2.15	1.90	1.52	1.10	.72	.45	.29	.23	.25	.29
35	1.14	1.44	1.73	1.89	1.92	1.93	2.06	2.22	2.30	2.21	1.93	1.55	1.13	.75	.50	.34	.27	.28	.29
37	1.23	1.55	1.82	1.96	1.97	2.02	2.19	2.35	2.41	2.28	1.98	1.59	1.18	.81	.57	.40	.32	.32	.30
39	1.36	1.68	1.94	2.03	2.05	2.15	2.34	2.49	2.52	2.37	2.05	1.64	1.23	.88	.64	.47	.39	.35	.31
41	1.52	1.85	2.07	2.14	2.17	2.30	2.50	2.64	2.64	2.45	2.11	1.70	1.29	.94	.70	.53	.44	.39	.34
43	1.72	2.03	2.21	2.25	2.31	2.47	2.67	2.79	2.75	2.53	2.16	1.74	1.33	1.00	.75	.58	.49	.43	.38
45	1.94	2.23	2.36	2.38	2.46	2.64	2.84	2.93	2.84	2.59	2.20	1.77	1.36	1.03	.78	.62	.54	.47	.43
47	2.18	2.43	2.51	2.53	2.62	2.82	2.99	3.04	2.91	2.62	2.22	1.77	1.37	1.04	.80	.64	.57	.52	.50
49	2.43	2.63	2.66	2.67	2.79	2.98	3.13	3.13	2.96	2.63	2.20	1.75	1.35	1.03	.80	.67	.61	.59	.59
51	2.67	2.81	2.80	2.81	2.95	3.13	3.24	3.20	2.98	2.62	2.17	1.72	1.32	1.01	.81	.70	.66	.68	.72
53	2.90	2.96	2.93	2.96	3.10	3.26	3.34	3.24	2.98	2.58	2.11	1.67	1.28	.99	.82	.74	.73	.79	.87
55	3.09	3.10	3.05	3.09	3.24	3.38	3.40	3.26	2.95	2.52	2.05	1.60	1.24	.98	.84	.80	.83	.93	1.05
57	3.26	3.21	3.16	3.22	3.36	3.47	3.45	3.25	2.90	2.45	1.97	1.54	1.20	.98	.88	.88	.95	1.10	1.25
59	3.39	3.30	3.26	3.34	3.47	3.53	3.47	3.22	2.83	2.37	1.90	1.49	1.18	1.00	.95	.99	1.11	1.28	1.46
61	3.48	3.38	3.36	3.44	3.56	3.59	3.47	3.17	2.76	2.29	1.83	1.45	1.18	1.05	1.03	1.13	1.29	1.48	1.67
63	3.54	3.44	3.45	3.54	3.64	3.62	3.45	3.12	2.68	2.21	1.77	1.42	1.20	1.12	1.15	1.28	1.48	1.67	1.88
65	3.58	3.50	3.53	3.63	3.69	3.63	3.42	3.06	2.60	2.14	1.72	1.41	1.24	1.21	1.29	1.45	1.66	1.85	2.05
67	3.61	3.55	3.60	3.69	3.73	3.62	3.37	2.98	2.51	2.07	1.68	1.42	1.30	1.32	1.44	1.62	1.83	2.00	2.18
69	3.62	3.59	3.66	3.74	3.74	3.59	3.30	2.88	2.42	2.00	1.66	1.45	1.39	1.44	1.59	1.79	1.98	2.12	2.28
71	3.62	3.62	3.70	3.76	3.72	3.53	3.20	2.78	2.33	1.93	1.64	1.49	1.48	1.58	1.75	1.93	2.08	2.19	2.33
73	3.60	3.63	3.71	3.74	3.67	3.44	3.08	2.66	2.23	1.87	1.64	1.55	1.59	1.72	1.90	2.06	2.14	2.21	2.36
75	3.57	3.62	3.69	3.69	3.57	3.31	2.94	2.52	2.12	1.81	1.65	1.62	1.70	1.86	2.03	2.15	2.17	2.19	2.37
77	3.51	3.57	3.63	3.60	3.44	3.15	2.77	2.37	2.01	1.77	1.67	1.70	1.83	2.00	2.14	2.21	2.16	2.15	2.38
79	3.42	3.48	3.52	3.46	3.27	2.96	2.58	2.21	1.90	1.73	1.71	1.79	1.95	2.13	2.23	2.23	2.12	2.11	2.41
81	3.31	3.36	3.36	3.27	3.05	2.73	2.37	2.04	1.80	1.72	1.75	1.90	2.09	2.25	2.30	2.22	2.07	2.09	2.47
83	3.14	3.19	3.16	3.04	2.80	2.49	2.15	1.88	1.72	1.72	1.82	2.02	2.22	2.35	2.35	2.19	2.03	2.11	2.55
85	2.95	2.98	2.92	2.78	2.53	2.23	1.94	1.73	1.66	1.74	1.91	2.15	2.35	2.45	2.37	2.15	2.01	2.19	2.66
87	2.73	2.73	2.66	2.50	2.25	1.98	1.74	1.61	1.63	1.79	2.02	2.29	2.48	2.53	2.37	2.11	2.03	2.31	2.78
89	2.47	2.46	2.37	2.20	1.97	1.73	1.56	1.52	1.63	1.86	2.15	2.43	2.60	2.59	2.36	2.10	2.11	2.47	2.90
91	2.21	2.18	2.08	1.91	1.70	1.51	1.42	1.46	1.66	1.95	2.28	2.57	2.71	2.62	2.34	2.12	2.23	2.66	3.02
93	1.94	1.89	1.79	1.63	1.45	1.32	1.31	1.44	1.71	2.06	2.42	2.70	2.79	2.64	2.33	2.18	2.41	2.86	3.12
95	1.67	1.63	1.52	1.38	1.24	1.17	1.23	1.45	1.79	2.18	2.55	2.80	2.84	2.63	2.33	2.30	2.63	3.05	3.20
97	1.43	1.38	1.28	1.15	1.05	1.05	1.19	1.48	1.87	2.30	2.67	2.88	2.85	2.60	2.36	2.46	2.85	3.21	3.26
99	1.22	1.16	1.07	.96	.91	.97	1.17	1.53	1.96	2.40	2.75	2.91	2.83	2.56	2.42	2.66	3.08	3.34	3.29
101	1.04	.98	.89	.81	.80	.92	1.17	1.58	2.04	2.48	2.80	2.91	2.77	2.53	2.52	2.87	3.28	3.43	3.29
103	.90	.83	.75	.69	.72	.89	1.21	1.64	2.11	2.53	2.81	2.86	2.69	2.51	2.65	3.08	3.43	3.47	3.27
105	.79	.72	.64	.60	.67	.88	1.24	1.69	2.15	2.55	2.78	2.77	2.59	2.52	2.80	3.26	3.53	3.48	3.22
107	.72	.64	.56	.54	.64	.88	1.27	1.72	2.18	2.54	2.71	2.66	2.50	2.56	2.96	3.40	3.58	3.45	3.15
109	.68	.58	.50	.49	.62	.89	1.29	1.74	2.17	2.50	2.61	2.52	2.43	2.64	3.11	3.50	3.59	3.40	3.07
111	.65	.54	.46	.46	.62	.91	1.31	1.75	2.15	2.42	2.48	2.38	2.40	2.74	3.24	3.55	3.55	3.32	2.99
113	.64	.51	.43	.45	.62	.92	1.33	1.75	2.11	2.33	2.34	2.27	2.41	2.86	3.34	3.56	3.48	3.22	2.90
115	.63	.49	.42	.45	.64	.95	1.36	1.75	2.07	2.23	2.21	2.20	2.47	2.98	3.40	3.53	3.39	3.12	2.82
117	.63	.48	.41	.46	.67	.99	1.38	1.75	2.02	2.13	2.09	2.17	2.56	3.08	3.42	3.46	3.27	3.00	2.73
119	.63	.48	.42	.49	.71	1.04	1.42	1.76	1.98	2.03	2.01	2.19	2.67	3.15	3.40	3.36	3.14	2.87	2.64
I	.63	.49	.45	.55	.78	1.12	1.48	1.78	1.94	1.95	1.98	2.26	2.77	3.18	3.33	3.23	2.99	2.72	2.54

The horizontal argument of this table is Arg. I.

Inequalities of the Latitude.

TABLE LXIV.

B.	d. o	d. 320	d. 640	d. 960	d. 1280	d. 1600	d. 1920	d. 2240	d. 2560	d. 2880	d. 3200	d. 3520	d. 3840	d. 4160	d. 4480	d. 4800	d. 5120	d. 5440
0	.76	.62	.48	.37	.27	.19	.13	.10	.09	.08	.09	.11	.13	.16	.19	.22	.26	.31
1	.96	.82	.69	.56	.45	.35	.27	.21	.17	.14	.13	.12	.11	.12	.13	.14	.16	.18
2	1.13	1.02	.90	.78	.66	.55	.46	.38	.31	.26	.21	.18	.15	.13	.12	.11	.10	.10
3	1.27	1.18	1.09	.98	.87	.77	.67	.57	.49	.42	.35	.30	.25	.21	.17	.13	.11	.08
4	1.34	1.30	1.24	1.16	1.07	.98	.88	.78	.69	.61	.53	.45	.39	.33	.27	.22	.17	.13
5	1.36	1.35	1.33	1.29	1.23	1.16	1.08	.99	.90	.81	.73	.64	.56	.49	.42	.35	.28	.22
6	1.31	1.34	1.36	1.36	1.34	1.29	1.24	1.17	1.09	1.01	.92	.84	.76	.68	.59	.51	.43	.36
7	1.20	1.27	1.33	1.36	1.37	1.37	1.34	1.30	1.25	1.18	1.11	1.04	.95	.87	.79	.70	.61	.53
8	1.06	1.15	1.23	1.30	1.35	1.38	1.39	1.38	1.36	1.32	1.27	1.21	1.14	1.06	.98	.90	.81	.72
9	.88	.99	1.09	1.19	1.27	1.33	1.37	1.40	1.41	1.40	1.38	1.34	1.29	1.24	1.17	1.09	1.01	.93
10	.71	.81	.92	1.03	1.13	1.22	1.30	1.36	1.40	1.42	1.43	1.43	1.41	1.37	1.33	1.27	1.20	1.12
11	.54	.64	.74	.85	.96	1.07	1.17	1.26	1.33	1.38	1.43	1.46	1.47	1.46	1.44	1.41	1.36	1.30
12	.41	.48	.57	.67	.78	.89	1.00	1.11	1.21	1.29	1.36	1.42	1.47	1.49	1.50	1.50	1.48	1.44
13	.33	.37	.43	.51	.60	.71	.82	.94	1.05	1.15	1.25	1.33	1.41	1.46	1.50	1.54	1.55	1.54
14	.30	.30	.33	.38	.45	.54	.64	.75	.86	.98	1.09	1.20	1.30	1.38	1.45	1.50	1.55	1.57
15	.34	.30	.30	.31	.35	.41	.49	.59	.69	.80	.91	1.02	1.14	1.24	1.33	1.42	1.48	1.54
16	.43	.37	.32	.30	.31	.33	.38	.45	.53	.63	.73	.85	.96	1.07	1.17	1.28	1.36	1.44
17	.57	.49	.41	.36	.33	.32	.33	.37	.42	.49	.58	.67	.78	.88	.99	1.10	1.20	1.29
18	.75	.65	.55	.48	.41	.37	.35	.34	.36	.40	.46	.52	.61	.70	.80	.91	1.01	1.11
19	.94	.84	.73	.64	.55	.48	.43	.38	.36	.37	.39	.43	.48	.55	.63	.72	.81	.91
20	1.12	1.03	.93	.83	.72	.63	.55	.48	.43	.40	.38	.38	.40	.44	.49	.56	.63	.72
21	1.27	1.21	1.12	1.02	.91	.81	.72	.62	.54	.48	.43	.40	.38	.39	.41	.44	.49	.55
22	1.38	1.35	1.28	1.20	1.10	1.00	.90	.79	.69	.61	.53	.46	.42	.39	.38	.38	.39	.43
23	1.44	1.44	1.40	1.34	1.27	1.18	1.08	.97	.86	.76	.66	.57	.50	.44	.40	.37	.35	.36
24	1.44	1.47	1.47	1.44	1.39	1.32	1.23	1.13	1.03	.92	.81	.71	.62	.54	.47	.41	.37	.34
25	1.39	1.45	1.49	1.49	1.47	1.42	1.35	1.27	1.17	1.07	.96	.86	.76	.66	.58	.50	.43	.38
26	1.29	1.38	1.44	1.48	1.48	1.47	1.43	1.37	1.29	1.20	1.10	1.01	.91	.80	.71	.62	.54	.47
27	1.18	1.27	1.36	1.41	1.45	1.46	1.45	1.42	1.37	1.30	1.22	1.14	1.05	.95	.86	.77	.67	.60
28	1.01	1.12	1.23	1.31	1.37	1.41	1.43	1.42	1.40	1.36	1.31	1.24	1.17	1.08	1.00	.92	.83	.75
29	.85	.96	1.07	1.16	1.25	1.31	1.35	1.38	1.39	1.37	1.35	1.31	1.26	1.20	1.14	1.06	.99	.90
30	.68	.79	.90	1.00	1.09	1.17	1.24	1.29	1.33	1.35	1.35	1.34	1.32	1.29	1.25	1.19	1.13	1.06
31	.53	.63	.73	.82	.92	1.01	1.09	1.16	1.23	1.28	1.31	1.33	1.34	1.34	1.33	1.30	1.26	1.21
32	.43	.49	.56	.65	.74	.83	.92	1.01	1.09	1.17	1.23	1.28	1.32	1.35	1.36	1.37	1.35	1.33
33	.35	.38	.43	.49	.57	.65	.74	.84	.94	1.03	1.11	1.19	1.25	1.31	1.35	1.39	1.40	1.41
34	.32	.32	.33	.36	.42	.49	.57	.66	.76	.86	.96	1.06	1.15	1.23	1.30	1.36	1.41	1.44
35	.35	.31	.29	.29	.32	.36	.42	.50	.59	.69	.80	.90	1.01	1.11	1.20	1.28	1.36	1.41
36	.44	.36	.31	.27	.26	.27	.31	.37	.44	.54	.63	.73	.84	.95	1.06	1.16	1.25	1.34
37	.57	.48	.39	.32	.28	.26	.26	.28	.33	.40	.48	.57	.67	.78	.89	1.00	1.11	1.21
38	.75	.64	.53	.43	.35	.30	.27	.26	.27	.31	.36	.44	.52	.61	.72	.83	.94	1.05
39	.95	.83	.71	.60	.49	.41	.34	.29	.27	.27	.30	.34	.40	.47	.56	.65	.75	.86
40	1.15	1.04	.92	.80	.68	.57	.48	.40	.34	.30	.29	.29	.32	.36	.42	.50	.58	.67
41	1.32	1.23	1.13	1.01	.89	.77	.66	.56	.47	.40	.35	.31	.30	.31	.34	.38	.44	.51
42	1.46	1.40	1.32	1.22	1.11	.99	.87	.75	.64	.54	.46	.39	.35	.32	.31	.32	.34	.39
43	1.54	1.51	1.47	1.40	1.31	1.20	1.09	.97	.85	.73	.62	.53	.45	.39	.35	.32	.31	.32
44	1.55	1.57	1.56	1.53	1.47	1.39	1.29	1.18	1.05	.93	.81	.70	.60	.51	.44	.38	.34	.31
45	1.51	1.56	1.59	1.60	1.57	1.52	1.45	1.36	1.25	1.13	1.01	.89	.78	.67	.58	.49	.42	.37
46	1.41	1.49	1.55	1.60	1.61	1.60	1.55	1.49	1.41	1.31	1.20	1.09	.97	.85	.75	.65	.56	.48
47	1.26	1.38	1.46	1.54	1.58	1.61	1.60	1.57	1.52	1.44	1.35	1.26	1.15	1.04	.93	.82	.72	.63
48	1.09	1.22	1.33	1.42	1.50	1.55	1.58	1.56	1.52	1.46	1.39	1.30	1.21	1.11	1.01	.91	.80	.70
49	.91	1.03	1.15	1.26	1.36	1.44	1.50	1.53	1.55	1.54	1.51	1.47	1.41	1.34	1.26	1.17	1.08	.99
50	.72	.83	.95	1.07	1.18	1.28	1.37	1.43	1.47	1.50	1.50	1.49	1.46	1.42	1.37	1.30	1.23	1.15
51	.53	.63	.74	.86	.98	1.09	1.19	1.27	1.34	1.40	1.43	1.45	1.46	1.44	1.42	1.38	1.34	1.28
52	.37	.45	.54	.65	.76	.87	.98	1.08	1.17	1.25	1.31	1.36	1.39	1.40	1.41	1.41	1.39	1.36
53	.24	.29	.36	.45	.55	.65	.76	.87	.97	1.06	1.14	1.21	1.27	1.31	1.35	1.37	1.38	1.38
54	.16	.17	.21	.27	.35	.44	.55	.65	.76	.86	.95	1.03	1.11	1.17	1.23	1.27	1.31	1.34
55	.13	.10	.11	.14	.19	.26	.35	.45	.55	.64	.74	.83	.91	.99	1.06	1.12	1.18	1.24
56	.15	.09	.06	.06	.08	.13	.19	.27	.35	.45	.54	.62	.71	.79	.86	.94	1.01	1.08
57	.24	.15	.08	.04	.03	.04	.08	.14	.20	.28	.36	.43	.51	.59	.66	.73	.81	.89
58	.38	.26	.16	.09	.05	.03	.03	.06	.10	.16	.21	.28	.34	.40	.47	.54	.61	.68
59	.55	.42	.30	.20	.13	.08	.05	.05	.06	.09	.13	.17	.21	.26	.30	.36	.42	.48
60	.76	.62	.48	.37	.27	.19	.13	.10	.09	.08	.09	.11	.13	.16	.19	.22	.26	.31

The horizontal argument of this table is Arg. I.

Inequalities of the Latitude.

TABLE LXIV—Continued.

B.	d. 5440	d. 5760	d. 6080	d. 6400	d. 6720	d. 7040	d. 7360	d. 7680	d. 8000	d. 8320	d. 8640	d. 8960	d. 9280	d. 9600	d. 9920	d. 10240	d. 10560	d. 10880	d. 11200
0	.31	.37	.43	.51	.60	.70	.80	.90	1.00	1.10	1.18	1.26	1.32	1.35	1.36	1.35	1.31	1.25	1.18
1	.18	.22	.26	.33	.41	.50	.60	.71	.83	.94	1.05	1.15	1.25	1.32	1.37	1.40	1.40	1.38	1.33
2	.10	.12	.15	.19	.25	.32	.41	.52	.64	.76	.89	1.01	1.14	1.24	1.33	1.39	1.43	1.44	1.43
3	.08	.08	.08	.10	.13	.19	.26	.35	.47	.59	.72	.86	.99	1.12	1.24	1.34	1.41	1.46	1.47
4	.13	.09	.07	.07	.08	.11	.16	.23	.33	.43	.56	.69	.84	.98	1.12	1.24	1.34	1.41	1.46
5	.22	.16	.12	.09	.08	.08	.11	.15	.23	.31	.43	.55	.69	.83	.97	1.10	1.22	1.32	1.40
6	.36	.28	.22	.17	.13	.11	.11	.13	.17	.24	.32	.43	.55	.68	.81	.95	1.08	1.20	1.30
7	.53	.44	.37	.30	.24	.19	.17	.16	.17	.21	.26	.34	.44	.55	.67	.80	.93	1.05	1.16
8	.72	.63	.55	.46	.39	.32	.27	.24	.22	.23	.25	.29	.36	.44	.54	.65	.77	.88	1.00
9	.93	.84	.75	.65	.57	.49	.42	.36	.32	.29	.28	.29	.32	.37	.44	.52	.62	.72	.82
10	1.12	1.04	.96	.86	.77	.68	.60	.52	.45	.40	.36	.33	.33	.34	.37	.42	.49	.57	.66
11	1.30	1.23	1.15	1.07	.98	.89	.80	.70	.62	.54	.47	.42	.37	.35	.35	.36	.39	.44	.51
12	1.44	1.40	1.34	1.27	1.18	1.09	1.00	.90	.81	.71	.62	.54	.47	.41	.37	.34	.34	.36	.39
13	1.54	1.52	1.48	1.43	1.36	1.28	1.20	1.10	1.00	.90	.80	.69	.60	.51	.44	.38	.34	.32	.32
14	1.57	1.58	1.57	1.54	1.50	1.44	1.37	1.28	1.19	1.09	.99	.87	.76	.65	.55	.47	.39	.34	.30
15	1.54	1.58	1.59	1.60	1.58	1.55	1.50	1.43	1.36	1.27	1.17	1.06	.94	.83	.71	.60	.50	.41	.34
16	1.44	1.51	1.55	1.59	1.60	1.60	1.57	1.53	1.48	1.41	1.33	1.23	1.12	1.01	.89	.77	.65	.54	.45
17	1.29	1.38	1.45	1.51	1.55	1.58	1.57	1.55	1.51	1.45	1.38	1.29	1.19	1.07	.96	.83	.72	.60	.50
18	1.11	1.21	1.29	1.37	1.44	1.49	1.53	1.55	1.54	1.52	1.47	1.41	1.34	1.25	1.14	1.03	.91	.79	.69
19	.91	1.01	1.10	1.19	1.28	1.35	1.41	1.46	1.49	1.52	1.52	1.49	1.45	1.39	1.31	1.22	1.11	1.00	.90
20	.72	.80	.90	.99	1.08	1.17	1.24	1.32	1.38	1.43	1.47	1.49	1.50	1.50	1.48	1.44	1.38	1.30	1.20
21	.55	.62	.70	.79	.88	.96	1.05	1.14	1.21	1.29	1.36	1.41	1.46	1.50	1.51	1.51	1.49	1.44	1.38
22	.43	.47	.53	.60	.68	.76	.85	.94	1.03	1.12	1.20	1.29	1.36	1.43	1.48	1.52	1.54	1.53	1.50
23	.36	.38	.41	.46	.52	.58	.66	.75	.84	.93	1.03	1.13	1.22	1.32	1.40	1.47	1.53	1.56	1.57
24	.34	.33	.34	.36	.40	.45	.51	.58	.66	.75	.84	.95	1.06	1.16	1.27	1.37	1.46	1.53	1.57
25	.38	.35	.33	.32	.33	.36	.39	.45	.51	.59	.67	.77	.88	.99	1.11	1.23	1.34	1.44	1.52
26	.47	.42	.37	.34	.32	.32	.33	.36	.40	.46	.53	.62	.71	.82	.94	1.06	1.19	1.30	1.40
27	.60	.52	.46	.40	.36	.34	.32	.33	.34	.37	.42	.48	.56	.65	.76	.88	1.01	1.13	1.25
28	.75	.66	.59	.52	.46	.41	.37	.34	.33	.33	.35	.38	.44	.51	.60	.71	.82	.95	1.07
29	.90	.82	.74	.66	.59	.52	.46	.40	.36	.34	.33	.33	.35	.40	.46	.54	.64	.75	.87
30	1.06	.99	.90	.83	.75	.67	.59	.51	.45	.39	.35	.32	.31	.32	.35	.40	.47	.56	.66
31	1.21	1.15	1.07	1.01	.92	.84	.75	.66	.57	.48	.41	.35	.30	.28	.27	.29	.33	.39	.47
32	1.33	1.29	1.24	1.17	1.10	1.02	.93	.82	.72	.62	.52	.43	.35	.29	.24	.22	.22	.25	.31
33	1.41	1.40	1.37	1.32	1.27	1.19	1.11	1.01	.90	.78	.66	.55	.44	.34	.26	.20	.16	.16	.18
34	1.44	1.46	1.45	1.44	1.40	1.35	1.28	1.18	1.08	.96	.83	.70	.56	.44	.33	.23	.16	.11	.10
35	1.41	1.46	1.49	1.50	1.49	1.46	1.41	1.34	1.25	1.14	1.01	.87	.72	.58	.44	.32	.21	.13	.08
36	1.34	1.41	1.47	1.50	1.53	1.53	1.50	1.46	1.39	1.29	1.18	1.05	.90	.75	.60	.45	.32	.21	.12
37	1.21	1.31	1.38	1.45	1.50	1.53	1.54	1.52	1.48	1.41	1.32	1.21	1.08	.93	.77	.62	.47	.34	.23
38	1.05	1.15	1.25	1.33	1.41	1.47	1.51	1.52	1.52	1.48	1.42	1.34	1.23	1.10	.96	.81	.66	.51	.38
39	.86	.97	1.07	1.17	1.26	1.35	1.41	1.46	1.49	1.49	1.47	1.42	1.35	1.25	1.13	.99	.86	.71	.57
40	.67	.77	.88	.98	1.08	1.18	1.26	1.34	1.40	1.43	1.45	1.44	1.41	1.35	1.27	1.16	1.05	.92	.78
41	.51	.59	.69	.78	.88	.98	1.08	1.17	1.25	1.32	1.37	1.40	1.41	1.39	1.35	1.28	1.20	1.10	.99
42	.39	.45	.51	.59	.68	.78	.87	.97	1.07	1.15	1.24	1.30	1.35	1.38	1.38	1.35	1.31	1.24	1.16
43	.32	.35	.39	.44	.51	.59	.67	.77	.87	.97	1.07	1.16	1.24	1.30	1.34	1.36	1.36	1.33	1.29
44	.31	.31	.31	.34	.38	.44	.50	.59	.68	.77	.88	.98	1.08	1.17	1.25	1.30	1.34	1.36	1.35
45	.37	.33	.30	.30	.31	.33	.38	.44	.51	.59	.69	.80	.90	1.01	1.11	1.20	1.27	1.32	1.36
46	.48	.41	.36	.32	.30	.29	.31	.34	.39	.45	.53	.62	.72	.83	.94	1.05	1.14	1.23	1.29
47	.63	.55	.47	.40	.35	.31	.30	.30	.32	.35	.40	.48	.56	.66	.77	.88	.98	1.09	1.18
48	.80	.71	.62	.53	.46	.40	.35	.32	.31	.31	.33	.37	.43	.51	.60	.70	.81	.92	1.03
49	.99	.89	.80	.70	.61	.53	.46	.40	.35	.33	.31	.32	.35	.39	.46	.54	.63	.74	.85
50	1.15	1.07	.98	.88	.79	.69	.61	.53	.46	.40	.35	.33	.32	.33	.36	.42	.49	.57	.67
51	1.28	1.22	1.14	1.06	.96	.87	.78	.68	.60	.52	.45	.39	.34	.32	.32	.34	.37	.43	.51
52	1.36	1.32	1.27	1.21	1.13	1.05	.96	.86	.77	.67	.59	.50	.43	.37	.33	.31	.31	.34	.38
53	1.38	1.37	1.35	1.31	1.26	1.19	1.12	1.03	.94	.84	.75	.65	.55	.47	.40	.35	.31	.30	.31
54	1.34	1.36	1.36	1.36	1.33	1.29	1.24	1.17	1.10	1.01	.92	.81	.71	.61	.52	.44	.37	.32	.30
55	1.24	1.28	1.31	1.34	1.34	1.34	1.31	1.28	1.22	1.16	1.08	.99	.88	.78	.67	.57	.49	.41	.35
56	1.08	1.14	1.20	1.25	1.29	1.31	1.32	1.32	1.30	1.26	1.20	1.14	1.05	.95	.85	.74	.64	.54	.46
57	.89	.96	1.03	1.11	1.17	1.23	1.26	1.30	1.31	1.31	1.29	1.25	1.19	1.11	1.03	.93	.82	.72	.62
58	.68	.76	.84	.92	1.00	1.08	1.15	1.21	1.26	1.30	1.31	1.31	1.29	1.24	1.18	1.10	1.01	.91	.80
59	.48	.56	.63	.72	.81	.90	.99	1.08	1.16	1.22	1.27	1.31	1.33	1.32	1.30	1.25	1.18	1.09	1.00
60	.31	.37	.43	.51	.60	.70	.80	.90	1.00	1.10	1.18	1.26	1.32	1.35	1.36	1.35	1.31	1.25	1.18

The horizontal argument of this table is Arg. I.

Inequalities of the Latitude.

TABLE LXV.

C.	d. 0	d. 1280	d. 2560	d. 3840	d. 5120	d. 6400	d. 7680	d. 8960	d. 10240	d. 11520
0	"	"	"	"	"	"	"	"	"	"
3	.04	.04	.03	.02	.01	.01	.00	.00	.01	.01
6	.03	.03	.04	.03	.03	.02	.01	.00	.00	.00
9	.02	.03	.03	.04	.04	.04	.02	.01	.00	.00
12	.01	.02	.02	.03	.04	.04	.03	.02	.00	.00
15	.01	.01	.01	.02	.03	.04	.04	.03	.01	.01
18	.00	.00	.01	.01	.01	.02	.04	.03	.03	.02
21	.00	.00	.00	.00	.00	.01	.02	.03	.03	.03
24	.01	.00	.00	.00	.00	.00	.01	.02	.03	.04
27	.02	.01	.01	.01	.00	.00	.00	.01	.02	.03
30	.03	.02	.02	.01	.01	.00	.00	.00	.01	.03
33	.03	.03	.03	.02	.02	.01	.00	.00	.00	.01
36	.03	.04	.04	.03	.03	.02	.02	.01	.01	.01
39	.02	.04	.04	.04	.04	.03	.03	.03	.02	.01
42	.01	.03	.04	.04	.04	.04	.04	.04	.03	.02
45	.01	.02	.03	.04	.04	.04	.04	.04	.04	.03
48	.01	.01	.01	.02	.03	.03	.04	.04	.04	.04
51	.02	.01	.00	.01	.02	.02	.03	.03	.04	.04
54	.03	.02	.00	.00	.00	.01	.02	.02	.03	.03
57	.04	.03	.01	.00	.00	.00	.01	.02	.02	.03
60	.04	.04	.02	.01	.00	.00	.00	.01	.01	.02
	.04	.04	.03	.02	.01	.01	.00	.00	.01	.01

The horizontal argument of this table is Arg. I.

Inequalities of the Latitude—Factor to be multiplied by m.

TABLE LXVI.

Arg.	Factor.	Arg.	Factor.	Arg.	Factor.	Arg.	Factor.	Arg.	Factor.
d.	"	d.	"	d.	"	d.	"	d.	"
0	+23.541	2160	+9.962	4320	-17.289	6480	-22.894	8640	-0.126
40	23.678	2200	9.429	4360	17.650	6520	22.710	8680	+0.459
80	23.797	2240	8.893	4400	18.003	6560	22.514	8720	1.045
120	23.900	2280	8.353	4440	18.348	6600	22.309	8760	1.631
160	23.987	2320	7.809	4480	18.683	6640	22.093	8800	2.218
200	24.057	2360	7.263	4520	19.011	6680	21.866	8840	2.805
240	24.111	2400	6.714	4560	19.329	6720	21.629	8880	3.392
280	24.148	2440	6.162	4600	19.638	6760	21.382	8920	3.979
320	24.169	2480	5.608	4640	19.939	6800	21.124	8960	4.564
360	24.172	2520	5.053	4680	20.230	6840	20.856	9000	5.148
400	24.160	2560	4.497	4720	20.512	6880	20.578	9040	5.730
440	24.130	2600	3.939	4760	20.784	6920	20.290	9080	6.310
480	24.084	2640	3.381	4800	21.048	6960	19.991	9120	6.888
520	24.022	2680	2.822	4840	21.302	7000	19.683	9160	7.462
560	23.944	2720	2.263	4880	21.546	7040	19.365	9200	8.033
600	23.849	2760	1.705	4920	21.781	7080	19.037	9240	8.601
640	23.738	2800	1.146	4960	22.006	7120	18.699	9280	9.164
680	23.611	2840	0.589	5000	22.221	7160	18.352	9320	9.723
720	23.469	2880	+0.033	5040	22.427	7200	17.995	9360	10.277
760	23.311	2920	-0.522	5080	22.622	7240	17.629	9400	10.825
800	23.137	2960	1.076	5120	22.808	7280	17.253	9440	11.368
840	22.948	3000	1.627	5160	22.984	7320	16.868	9480	11.904
880	22.744	3040	2.176	5200	23.149	7360	16.474	9520	12.434
920	22.525	3080	2.723	5240	23.305	7400	16.071	9560	12.957
960	22.292	3120	3.268	5280	23.450	7440	15.660	9600	13.472
1000	22.044	3160	3.809	5320	23.585	7480	15.239	9640	13.980
1040	21.782	3200	4.347	5360	23.709	7520	14.811	9680	14.480
1080	21.506	3240	4.882	5400	23.824	7560	14.374	9720	14.970
1120	21.217	3280	5.413	5440	23.928	7600	13.928	9760	15.452
1160	20.914	3320	5.940	5480	24.021	7640	13.475	9800	15.925
1200	20.598	3360	6.463	5520	24.104	7680	13.013	9840	16.388
1240	20.269	3400	6.982	5560	24.177	7720	12.544	9880	16.840
1280	19.928	3440	7.497	5600	24.239	7760	12.068	9920	17.282
1320	19.575	3480	8.006	5640	24.290	7800	11.584	9960	17.713
1360	19.210	3520	8.511	5680	24.331	7840	11.093	10000	18.133
1400	18.834	3560	9.010	5720	24.361	7880	10.595	10040	18.541
1440	18.446	3600	9.505	5760	24.380	7920	10.090	10080	18.937
1480	18.048	3640	9.993	5800	24.389	7960	9.578	10120	19.321
1520	17.639	3680	10.476	5840	24.387	8000	9.061	10160	19.692
1560	17.220	3720	10.953	5880	24.375	8040	8.537	10200	20.051
1600	16.791	3760	11.424	5920	24.351	8080	8.007	10240	20.396
1640	16.353	3800	11.889	5960	24.317	8120	7.472	10280	20.727
1680	15.906	3840	12.347	6000	24.272	8160	6.931	10320	21.045
1720	15.449	3880	12.799	6040	24.216	8200	6.386	10360	21.348
1760	14.985	3920	13.244	6080	24.150	8240	5.835	10400	21.637
1800	14.513	3960	13.682	6120	24.073	8280	5.280	10440	21.912
1840	14.033	4000	14.113	6160	23.985	8320	4.721	10480	22.171
1880	13.545	4040	14.536	6200	23.886	8360	4.157	10520	22.416
1920	13.051	4080	14.953	6240	23.776	8400	3.590	10560	22.645
1960	12.550	4120	15.362	6280	23.656	8440	3.019	10600	22.859
2000	12.044	4160	15.763	6320	23.525	8480	2.446	10640	23.057
2040	11.531	4200	16.156	6360	23.383	8520	1.869	10680	23.239
2080	11.013	4240	16.542	6400	23.231	8560	1.290	10720	23.405
2120	+10.490	4280	-16.920	6440	-23.068	8600	-0.709	10760	23.555
	-528		-369		+174		+583	10800	+23.689

The argument of this table is the Fundamental Argument.

Inequalities of the Latitude—Factor to be multiplied by m.

TABLE LXVII.

A.	d. 0	d. 320	d. 640	d. 960	d. 1280	d. 1600	d. 1920	d. 2240	d. 2560	d. 2880	d. 3200	d. 3520	d. 3840	d. 4160	d. 4480	d. 4800	d. 5120	d. 5440
1	.104	.087	.071	.056	.044	.035	.029	.026	.025	.027	.029	.032	.035	.037	.040	.043	.048	.057
3	.089	.072	.056	.043	.032	.025	.021	.021	.022	.026	.031	.036	.041	.045	.049	.054	.061	.072
5	.073	.057	.042	.031	.022	.017	.016	.018	.022	.028	.035	.042	.049	.054	.060	.066	.075	.087
7	.059	.044	.031	.021	.015	.013	.014	.018	.025	.034	.042	.051	.059	.066	.072	.080	.090	.102
9	.046	.033	.021	.014	.010	.011	.015	.021	.031	.041	.052	.062	.071	.078	.086	.094	.104	.116
11	.035	.024	.015	.010	.009	.012	.019	.028	.039	.052	.063	.074	.083	.091	.099	.107	.117	.129
13	.027	.017	.011	.009	.011	.017	.026	.037	.050	.064	.077	.088	.097	.105	.112	.120	.129	.140
15	.021	.014	.011	.011	.016	.024	.036	.049	.063	.078	.091	.102	.110	.118	.124	.132	.140	.150
17	.018	.014	.013	.017	.024	.034	.048	.062	.078	.093	.105	.116	.123	.130	.135	.142	.149	.157
19	.019	.017	.019	.025	.035	.047	.062	.078	.093	.108	.120	.129	.135	.140	.145	.149	.155	.161
21	.022	.023	.027	.036	.047	.061	.078	.094	.110	.124	.134	.141	.146	.149	.152	.155	.159	.163
23	.027	.031	.038	.049	.062	.077	.094	.110	.125	.138	.147	.152	.155	.156	.157	.158	.160	.162
25	.036	.042	.051	.063	.078	.094	.111	.126	.140	.151	.158	.161	.160	.159	.158	.158	.158	.159
27	.047	.055	.066	.079	.095	.111	.127	.142	.154	.162	.166	.167	.165	.162	.159	.156	.154	.153
29	.059	.069	.081	.095	.111	.127	.143	.156	.166	.172	.173	.171	.166	.161	.156	.152	.148	.146
31	.073	.084	.097	.111	.127	.142	.156	.168	.175	.178	.176	.172	.164	.157	.151	.145	.141	.137
33	.088	.099	.112	.127	.142	.156	.168	.177	.181	.181	.177	.170	.160	.152	.143	.137	.131	.127
35	.102	.114	.127	.141	.155	.167	.177	.183	.185	.182	.175	.165	.154	.144	.135	.127	.121	.117
37	.116	.128	.140	.153	.166	.176	.184	.187	.186	.180	.170	.158	.146	.134	.124	.117	.111	.106
39	.129	.140	.152	.163	.174	.182	.187	.187	.183	.175	.162	.149	.135	.124	.114	.106	.101	.097
41	.141	.151	.161	.171	.179	.185	.187	.185	.178	.167	.153	.138	.124	.112	.103	.096	.092	.088
43	.151	.159	.167	.175	.181	.185	.184	.179	.170	.157	.142	.126	.112	.101	.093	.087	.084	.082
45	.158	.164	.171	.176	.181	.182	.179	.171	.160	.145	.129	.114	.101	.090	.083	.079	.077	.077
47	.162	.167	.172	.175	.177	.176	.171	.161	.148	.133	.116	.102	.089	.081	.075	.073	.073	.075
49	.164	.167	.170	.171	.171	.168	.161	.149	.135	.119	.104	.090	.079	.072	.069	.069	.071	.075
51	.163	.164	.165	.165	.163	.158	.149	.137	.122	.106	.092	.080	.071	.066	.065	.067	.072	.078
53	.159	.159	.158	.157	.153	.146	.136	.123	.109	.094	.081	.071	.064	.062	.063	.068	.075	.083
55	.154	.152	.150	.147	.142	.134	.123	.110	.096	.083	.071	.064	.060	.060	.064	.071	.081	.091
57	.146	.143	.140	.136	.130	.121	.111	.098	.085	.073	.064	.059	.058	.061	.068	.077	.088	.100
59	.137	.133	.129	.124	.118	.109	.099	.087	.076	.066	.059	.057	.059	.065	.074	.085	.097	.110
61	.127	.122	.118	.113	.106	.098	.088	.078	.068	.061	.057	.058	.062	.071	.082	.094	.108	.121
63	.116	.112	.108	.103	.096	.089	.080	.071	.063	.058	.057	.061	.068	.078	.091	.105	.120	.133
65	.106	.101	.098	.093	.088	.081	.073	.066	.061	.058	.060	.066	.076	.088	.102	.117	.132	.145
67	.096	.092	.089	.086	.081	.075	.069	.064	.061	.061	.066	.074	.085	.099	.114	.129	.143	.156
69	.087	.084	.082	.080	.076	.072	.067	.064	.064	.066	.073	.083	.096	.111	.126	.141	.154	.165
71	.080	.078	.078	.076	.074	.071	.068	.067	.069	.073	.082	.094	.108	.123	.138	.152	.164	.173
73	.074	.074	.075	.075	.074	.072	.071	.072	.076	.082	.093	.105	.120	.135	.149	.162	.172	.179
75	.071	.073	.075	.077	.077	.077	.077	.080	.085	.093	.104	.117	.132	.146	.159	.170	.178	.182
77	.070	.074	.078	.083	.083	.083	.085	.089	.095	.104	.116	.129	.143	.156	.167	.176	.182	.182
79	.071	.077	.082	.085	.088	.091	.094	.099	.106	.116	.128	.140	.153	.164	.174	.180	.182	.180
81	.075	.083	.089	.094	.097	.100	.104	.110	.118	.127	.138	.150	.161	.170	.177	.181	.180	.175
83	.081	.090	.098	.103	.107	.111	.115	.121	.129	.138	.148	.158	.167	.174	.179	.179	.176	.167
85	.090	.099	.107	.113	.118	.122	.126	.132	.139	.147	.156	.164	.171	.175	.177	.175	.168	.156
87	.099	.110	.118	.124	.129	.132	.136	.142	.148	.155	.162	.167	.172	.174	.172	.167	.158	.144
89	.110	.121	.130	.135	.139	.142	.146	.150	.155	.160	.165	.168	.170	.170	.166	.158	.145	.129
91	.122	.133	.141	.146	.149	.151	.153	.156	.160	.163	.166	.167	.166	.163	.156	.146	.131	.113
93	.134	.144	.151	.155	.157	.158	.159	.160	.162	.163	.163	.162	.159	.153	.144	.132	.116	.097
95	.145	.155	.160	.162	.163	.162	.162	.161	.161	.160	.158	.155	.150	.142	.131	.117	.100	.080
97	.156	.164	.167	.168	.167	.165	.162	.160	.158	.155	.151	.145	.138	.129	.117	.101	.084	.064
99	.165	.171	.173	.171	.168	.164	.160	.156	.152	.147	.141	.134	.126	.115	.102	.086	.068	.049
101	.172	.176	.175	.172	.167	.161	.155	.149	.143	.137	.130	.121	.112	.100	.087	.071	.054	.036
103	.177	.178	.175	.169	.162	.155	.147	.140	.132	.125	.117	.107	.097	.086	.072	.057	.041	.025
105	.179	.177	.172	.164	.155	.146	.137	.128	.120	.112	.103	.093	.083	.072	.059	.045	.030	.017
107	.178	.174	.166	.156	.145	.135	.125	.115	.106	.097	.089	.080	.070	.059	.047	.035	.022	.012
109	.174	.167	.157	.145	.133	.122	.111	.101	.092	.083	.075	.067	.058	.048	.038	.027	.018	.010
111	.168	.158	.146	.133	.120	.107	.096	.086	.077	.070	.062	.055	.048	.040	.031	.023	.016	.011
113	.159	.147	.133	.118	.105	.092	.081	.072	.064	.057	.051	.045	.040	.034	.027	.021	.017	.015
115	.147	.134	.118	.103	.089	.077	.066	.058	.051	.046	.042	.038	.035	.030	.026	.022	.021	.022
117	.134	.119	.103	.087	.073	.062	.052	.045	.040	.037	.035	.033	.032	.030	.028	.026	.028	.032
119	.120	.103	.087	.071	.058	.048	.040	.035	.031	.030	.031	.031	.032	.032	.032	.033	.037	.044
1	.104	.087	.071	.056	.044	.035	.029	.026	.025	.027	.029	.032	.035	.037	.040	.043	.048	.057

The horizontal argument of this table is Arg. I.

Inequalities of the Latitude—Factor to be multiplied by m.

TABLE LXVII—Continued.

A.	d. 5440	d. 5760	d. 6080	d. 6400	d. 6720	d. 7040	d. 7360	d. 7680	d. 8000	d. 8320	d. 8640	d. 8960	d. 9280	d. 9600	d. 9920	d. 10240	d. 10560	d. 10880	d. 11200
1	.057	.070	.086	.104	.124	.143	.160	.172	.180	.183	.181	.176	.169	.162	.153	.146	.140	.136	.132
3	.072	.085	.102	.120	.139	.157	.172	.182	.187	.186	.182	.174	.165	.155	.146	.137	.130	.125	.121
5	.087	.101	.118	.135	.153	.169	.181	.188	.190	.186	.179	.169	.158	.147	.136	.127	.120	.115	.110
7	.102	.116	.132	.149	.165	.178	.187	.191	.190	.184	.174	.162	.149	.137	.126	.116	.109	.104	.100
9	.116	.130	.145	.160	.174	.184	.191	.192	.187	.178	.167	.153	.139	.126	.115	.106	.099	.094	.091
11	.129	.142	.156	.169	.180	.188	.191	.189	.182	.171	.157	.143	.128	.114	.103	.095	.090	.086	.084
13	.140	.152	.164	.175	.184	.188	.189	.184	.174	.161	.146	.131	.116	.103	.093	.085	.081	.079	.078
15	.150	.160	.170	.178	.184	.186	.184	.176	.165	.150	.134	.118	.104	.092	.083	.077	.075	.074	.075
17	.157	.165	.173	.179	.182	.181	.176	.166	.153	.138	.122	.106	.092	.081	.074	.071	.070	.072	.074
19	.161	.167	.173	.176	.177	.174	.167	.155	.141	.125	.109	.094	.082	.073	.068	.066	.068	.071	.076
21	.163	.167	.171	.172	.170	.165	.156	.143	.128	.112	.097	.083	.073	.066	.063	.064	.068	.073	.079
23	.162	.164	.166	.165	.161	.154	.144	.130	.115	.099	.085	.074	.065	.061	.061	.064	.071	.078	.085
25	.159	.159	.158	.156	.150	.142	.131	.117	.102	.088	.076	.066	.060	.058	.061	.067	.076	.085	.093
27	.153	.152	.150	.146	.139	.130	.119	.105	.091	.078	.068	.061	.057	.058	.064	.072	.083	.094	.103
29	.146	.143	.140	.135	.128	.118	.107	.094	.081	.070	.062	.057	.057	.061	.069	.080	.092	.104	.114
31	.137	.133	.129	.124	.116	.107	.096	.084	.073	.065	.059	.057	.059	.066	.076	.089	.103	.115	.125
33	.127	.123	.118	.113	.106	.097	.087	.077	.068	.061	.058	.058	.064	.073	.085	.100	.114	.127	.136
35	.117	.112	.108	.103	.097	.089	.080	.072	.065	.061	.060	.063	.070	.082	.096	.111	.126	.138	.147
37	.106	.103	.099	.095	.089	.083	.076	.069	.064	.062	.064	.069	.079	.092	.108	.124	.138	.149	.157
39	.097	.094	.091	.088	.084	.079	.074	.069	.066	.067	.070	.078	.089	.104	.120	.136	.149	.159	.166
41	.088	.087	.086	.084	.081	.078	.074	.071	.071	.073	.078	.087	.100	.116	.132	.147	.160	.168	.172
43	.082	.082	.082	.082	.081	.079	.077	.076	.077	.081	.088	.098	.112	.128	.143	.157	.168	.174	.176
45	.077	.079	.081	.082	.083	.083	.082	.083	.085	.090	.098	.110	.123	.139	.153	.166	.174	.178	.177
47	.075	.079	.083	.085	.087	.088	.089	.091	.095	.101	.109	.121	.134	.149	.162	.172	.178	.179	.175
49	.075	.081	.086	.091	.094	.096	.098	.100	.105	.111	.120	.131	.144	.157	.168	.176	.179	.177	.171
51	.078	.085	.092	.098	.102	.105	.107	.110	.115	.121	.130	.140	.152	.164	.172	.177	.177	.172	.164
53	.083	.092	.100	.106	.111	.114	.117	.120	.125	.131	.138	.148	.158	.168	.174	.176	.172	.165	.154
55	.091	.101	.110	.116	.121	.124	.127	.130	.133	.139	.145	.154	.162	.169	.172	.171	.165	.155	.142
57	.100	.111	.120	.127	.132	.134	.136	.138	.141	.145	.150	.157	.163	.168	.168	.164	.155	.142	.128
59	.110	.122	.131	.137	.141	.143	.144	.145	.146	.149	.153	.158	.162	.164	.161	.154	.143	.129	.113
61	.121	.133	.142	.147	.150	.151	.150	.150	.150	.151	.153	.156	.158	.157	.152	.143	.129	.114	.097
63	.133	.144	.152	.156	.157	.156	.154	.152	.151	.151	.151	.152	.148	.141	.130	.115	.098	.081	.066
65	.145	.155	.161	.163	.163	.160	.156	.152	.149	.148	.146	.146	.143	.138	.128	.115	.099	.082	.066
67	.156	.164	.169	.169	.166	.161	.155	.150	.145	.142	.140	.137	.133	.126	.115	.101	.084	.067	.051
69	.165	.172	.174	.172	.166	.159	.152	.145	.139	.135	.131	.127	.121	.113	.101	.086	.069	.053	.038
71	.173	.177	.177	.172	.164	.155	.146	.138	.131	.125	.120	.115	.109	.099	.087	.072	.056	.041	.028
73	.179	.180	.177	.170	.160	.148	.137	.128	.120	.114	.109	.103	.096	.086	.073	.059	.044	.031	.020
75	.182	.180	.174	.164	.152	.139	.127	.117	.108	.102	.096	.091	.083	.073	.061	.048	.034	.023	.015
77	.182	.178	.169	.156	.142	.128	.115	.104	.095	.089	.084	.078	.071	.061	.050	.038	.027	.018	.013
79	.180	.172	.161	.146	.130	.115	.101	.090	.082	.077	.072	.067	.060	.051	.042	.031	.023	.016	.013
81	.175	.164	.150	.133	.116	.100	.087	.076	.069	.064	.061	.056	.051	.043	.035	.027	.021	.017	.017
83	.167	.154	.137	.119	.101	.085	.072	.063	.057	.053	.051	.048	.044	.038	.032	.026	.022	.022	.024
85	.156	.141	.122	.103	.085	.070	.058	.050	.045	.044	.043	.041	.039	.035	.031	.027	.027	.028	.034
87	.144	.126	.106	.087	.069	.055	.044	.038	.036	.036	.037	.037	.037	.035	.033	.032	.034	.038	.045
89	.129	.110	.089	.070	.054	.041	.032	.028	.028	.031	.034	.036	.037	.037	.038	.039	.043	.049	.059
91	.113	.093	.073	.054	.039	.028	.022	.021	.023	.028	.033	.037	.040	.042	.045	.048	.054	.063	.073
93	.097	.076	.057	.039	.026	.018	.014	.016	.021	.028	.035	.041	.046	.050	.054	.060	.067	.077	.089
95	.080	.060	.041	.026	.016	.010	.010	.014	.022	.032	.040	.048	.054	.060	.066	.072	.081	.092	.104
97	.064	.045	.028	.015	.008	.006	.008	.016	.026	.038	.048	.057	.065	.071	.078	.086	.096	.107	.119
99	.049	.032	.017	.007	.003	.004	.010	.020	.033	.046	.058	.068	.077	.084	.092	.100	.110	.121	.133
101	.036	.021	.009	.002	.001	.006	.015	.028	.043	.057	.070	.081	.090	.098	.106	.114	.123	.134	.145
103	.025	.012	.004	.000	.003	.011	.023	.038	.055	.070	.084	.095	.103	.111	.119	.126	.135	.145	.155
105	.017	.007	.002	.002	.008	.019	.033	.051	.069	.085	.098	.109	.117	.125	.131	.138	.146	.154	.162
107	.012	.005	.003	.007	.016	.030	.047	.066	.081	.100	.113	.123	.130	.137	.142	.148	.154	.160	.167
109	.010	.006	.008	.015	.027	.043	.062	.082	.100	.116	.127	.136	.142	.147	.151	.155	.159	.164	.169
111	.011	.011	.015	.026	.041	.059	.079	.098	.116	.131	.141	.148	.152	.156	.158	.160	.162	.165	.168
113	.015	.018	.026	.039	.056	.075	.096	.115	.132	.145	.154	.158	.161	.162	.162	.162	.163	.164	.164
115	.022	.028	.039	.054	.072	.093	.113	.132	.147	.158	.164	.167	.167	.166	.164	.162	.160	.159	.159
117	.032	.040	.053	.070	.090	.110	.130	.147	.160	.169	.172	.173	.170	.167	.163	.159	.156	.153	.151
119	.044	.055	.069	.087	.107	.127	.146	.161	.172	.177	.178	.176	.171	.166	.159	.154	.149	.145	.142
1	.057	.070	.086	.104	.124	.143	.160	.172	.180	.183	.181	.176	.169	.162	.153	.146	.140	.136	.132

The horizontal argument of this table is Arg. I.

*Inequalities of the Latitude.**Factor to be multiplied by m^2 .**Factor to be multiplied by m^3 .*

TABLE LXVIII.

Arg.	Factor.	Arg.	Factor.
d.	"	d.	"
0	+0.0053—39	5440	—0.0041+31
160	+0.0014 39	5600	—0.0010+32
320	—0.0025 39	5760	+0.0022 31
480	0.0064 39	5920	0.0053 31
640	0.0102 38	6080	0.0084 31
800	0.0139 37	6240	0.0115 30
960	0.0174 35	6400	0.0145 29
1120	0.0207 33	6560	0.0174 28
1280	0.0238 31	6720	0.0202 26
1440	0.0266 28	6880	0.0228 25
1600	0.0291 25	7040	0.0253 23
1760	0.0313 22	7200	0.0276 22
1920	0.0332 19	7360	0.0298 19
2080	0.0347 15	7520	0.0317 17
2240	0.0359 9	7680	0.0334 14
2400	0.0368 5	7840	0.0348 11
2560	0.0373 2	8000	0.0359 9
2720	0.0375 +1	8160	0.0368 5
2880	0.0374 +4	8320	0.0373 +2
3040	0.0370 8	8480	0.0375 —1
3200	0.0362 10	8640	0.0374 5
3360	0.0352 12	8800	0.0369 8
3520	0.0340 16	8960	0.0361 12
3680	0.0324 17	9120	0.0349 16
3840	0.0307 20	9280	0.0333 19
4000	0.0287 22	9440	0.0314 22
4160	0.0265 24	9600	0.0292 26
4320	0.0241 25	9760	0.0266 28
4480	0.0216 27	9920	0.0238 31
4640	0.0189 28	10080	0.0207 34
4800	0.0161 29	10240	0.0173 36
4960	0.0132 30	10400	0.0137 37
5120	0.0102 30	10560	0.0100 38
5280	0.0072 +31	10720	0.0062 —39
5440	—0.0041 +31	10880	+0.0023 —39

TABLE LXIX.

Arg.	Factor.
d.	"
0	—0.00003
320	4
640	4
960	3
1280	3
1600	3
1920	2
2240	2
2560	—1
2880	0
3200	0
3520	+1
3840	2
4160	2
4480	3
4800	3
5120	3
5440	3
5760	4
6080	4
6400	3
6720	3
7040	3
7360	2
7680	2
8000	1
8320	+1
8640	0
8960	0
9280	—1
9600	2
9920	2
10240	3
10560	3
10880	—0.00004

The argument of these two tables is the Fundamental Argument

TABLES OF

Principal Term of the Latitude.

TABLE LXX.

Arg.	d. o	Daily Motion.	d. 8	Daily Motion.	d. 16	Daily Motion.	d. 24	Daily Motion.	d. 32	Daily Motion.
d.	o / "	"	o / "	"	o / "	"	o / "	"	o / "	"
0	0 57 11.45	+5.438	0 56 27.90	+5.449	0 55 44.26	+5.461	0 55 0.53	+5.472	0 54 16.72	+5.483
40	0 53 32.81	5.494	0 52 48.82	5.505	0 52 4.74	5.515	0 51 20.58	5.526	0 50 36.34	5.536
80	0 49 52.01	5.546	0 49 7.61	5.556	0 48 23.12	5.566	0 47 38.56	5.576	0 46 53.92	5.585
120	0 46 9.21	5.594	0 45 24.42	5.603	0 44 39.56	5.612	0 43 54.63	5.621	0 43 9.63	5.630
160	0 42 24.57	5.638	0 41 39.43	5.646	0 40 54.24	5.654	0 40 8.97	5.662	0 39 23.65	5.670
200	0 38 38.26	5.677	0 37 52.82	5.685	0 37 7.32	5.692	0 36 21.76	5.699	0 35 36.14	5.706
240	0 34 50.47	5.713	0 34 4.75	5.719	0 33 18.98	5.725	0 32 33.15	5.732	0 31 47.28	5.738
280	0 31 1.36	5.743	0 30 15.40	5.749	0 29 29.39	5.754	0 28 43.34	5.760	0 27 57.24	5.765
320	0 27 11.11	5.770	0 26 24.94	5.774	0 25 38.73	5.779	0 24 52.48	5.783	0 24 6.20	5.788
360	0 23 19.89	5.792	0 22 33.55	5.795	0 21 47.17	5.799	0 21 0.77	5.803	0 20 14.34	5.806
400	0 19 27.88	5.809	0 18 41.40	5.812	0 17 54.90	5.815	0 17 8.37	5.818	0 16 21.82	5.820
440	0 15 35.26	5.822	0 14 48.68	5.824	0 14 2.08	5.826	0 13 15.46	5.828	0 12 28.83	5.830
480	0 11 42.19	5.831	0 10 55.54	5.833	0 10 8.88	5.833	0 9 22.21	5.834	0 8 35.54	5.835
520	0 7 48.86	5.836	0 7 2.18	5.836	0 6 15.50	5.836	0 5 28.81	5.836	0 4 42.13	5.836
560	0 3 55.44	5.836	0 3 8.76	5.835	0 2 22.08	5.835	0 1 35.42	5.834	0 0 48.75	5.833
600	0 0 2.10	5.831	0 0 44.54	5.830	0 1 31.17	5.829	0 2 17.78	5.827	0 3 4.39	5.825
640	+0 3 50.98	5.823	0 4 37.55	5.821	0 5 24.10	5.818	0 6 10.63	5.816	0 6 57.14	5.813
680	0 7 43.63	5.810	0 8 30.09	5.807	0 9 16.53	5.804	0 10 2.95	5.800	0 10 49.33	5.797
720	0 11 35.69	5.793	0 12 22.01	5.789	0 13 8.31	5.785	0 13 54.57	5.781	0 14 40.79	5.776
760	0 15 26.98	5.772	0 16 13.13	5.767	0 16 59.24	5.762	0 17 45.32	5.757	0 18 31.35	5.752
800	0 19 17.34	5.746	0 20 3.28	5.741	0 20 49.18	5.735	0 21 35.03	5.729	0 22 20.84	5.723
840	0 23 6.60	5.717	0 23 52.31	5.711	0 24 37.96	5.704	0 25 23.55	5.697	0 26 9.11	5.690
880	0 26 54.60	5.683	0 27 40.04	5.676	0 28 25.41	5.669	0 29 10.73	5.662	0 29 55.99	5.654
920	0 30 41.19	5.646	0 31 26.32	5.638	0 32 11.39	5.630	0 32 56.40	5.622	0 33 41.33	5.613
960	0 34 26.20	5.605	0 35 11.00	5.596	0 35 55.72	5.587	0 36 40.38	5.578	0 37 24.97	5.569
1000	0 38 9.48	5.560	0 38 53.92	5.550	0 39 38.28	5.541	0 40 22.56	5.531	0 41 6.76	5.521
1040	0 41 50.88	5.511	0 42 34.92	5.500	0 43 18.88	5.490	0 44 2.75	5.480	0 44 46.54	5.469
1080	0 45 30.25	5.458	0 46 13.87	5.447	0 46 57.40	5.436	0 47 40.84	5.425	0 48 24.19	5.413
1120	0 49 7.45	5.402	0 49 50.61	5.390	0 50 33.68	5.378	0 51 16.66	5.367	0 51 59.54	5.355
1160	0 52 42.33	5.343	0 53 25.02	5.330	0 54 7.61	5.318	0 54 50.09	5.305	0 55 32.48	5.292
1200	0 56 14.76	5.279	0 56 56.94	5.266	0 57 39.01	5.253	0 58 20.98	5.240	0 59 2.84	5.226
1240	0 59 44.60	5.213	1 0 26.24	5.199	1 1 7.78	5.185	1 1 49.20	5.172	1 2 30.52	5.158
1280	1 3 11.72	5.144	1 3 52.81	5.129	1 4 33.78	5.115	1 5 14.63	5.100	1 5 55.37	5.085
1320	1 6 35.99	5.070	1 7 16.49	5.056	1 7 56.88	5.041	1 8 37.14	5.026	1 9 17.28	5.010
1360	1 9 57.30	4.995	1 10 37.19	4.979	1 11 16.96	4.964	1 11 56.61	4.948	1 12 36.12	4.932
1400	1 13 15.51	4.916	1 13 54.77	4.900	1 14 33.91	4.884	1 15 12.91	4.868	1 15 51.78	4.851
1440	1 16 30.52	4.835	1 17 9.13	4.818	1 17 47.61	4.801	1 18 25.95	4.784	1 19 4.15	4.767
1480	1 19 42.22	4.750	1 20 20.15	4.733	1 20 57.95	4.716	1 21 35.60	4.699	1 22 13.12	4.681
1520	1 22 50.49	4.664	1 23 27.73	4.646	1 24 4.82	4.628	1 24 41.77	4.610	1 25 18.58	4.592
1560	1 25 55.24	4.574	1 26 31.76	4.556	1 27 8.13	4.538	1 27 44.36	4.519	1 28 20.44	4.501
1600	1 28 56.37	4.482	1 29 32.15	4.464	1 30 7.78	4.445	1 30 43.26	4.426	1 31 18.59	4.407
1640	1 31 53.77	4.388	1 32 28.80	4.369	1 33 3.67	4.350	1 33 38.39	4.331	1 34 12.95	4.311
1680	1 34 47.36	4.292	1 35 21.62	4.272	1 35 55.71	4.253	1 36 29.65	4.233	1 37 3.44	4.213
1720	1 37 37.06	4.193	1 38 10.53	4.173	1 38 43.83	4.153	1 39 16.97	4.133	1 39 49.96	4.113
1760	1 40 22.78	4.093	1 40 55.44	4.073	1 41 27.93	4.052	1 42 0.26	4.032	1 42 32.43	4.011
1800	1 43 4.44	3.990	1 43 36.27	3.970	1 44 7.95	3.949	1 44 39.45	3.928	1 45 10.79	3.907
1840	1 45 41.97	3.886	1 46 12.97	3.865	1 46 43.81	3.844	1 47 14.47	3.823	1 47 44.97	3.802
1880	1 48 15.30	3.780	1 48 45.45	3.759	1 49 15.44	3.738	1 49 45.25	3.716	1 50 14.89	3.695
1920	1 50 44.36	3.673	1 51 13.66	3.651	1 51 42.78	3.630	1 52 11.73	3.608	1 52 40.50	3.586
1960	1 53 9.10	3.564	1 53 37.52	3.542	1 54 5.77	3.520	1 54 33.84	3.498	1 55 1.74	3.476
2000	1 55 29.45	3.454	1 55 56.99	3.431	1 56 24.35	3.409	1 56 51.53	3.387	1 57 18.54	3.365
2040	1 57 45.37	3.342	1 58 12.01	3.320	1 58 38.48	3.297	1 59 5.76	3.275	1 59 30.87	3.252
2080	1 59 56.79	3.229	2 0 22.54	3.207	2 0 48.10	3.184	2 1 13.48	3.161	2 1 38.67	3.138
2120	+2 2 3.09	+3.116	+2 2 28.52	+3.093	+2 2 53.17	+3.070	+2 3 17.63	+3.047	+2 3 41.91	+3.024

The Argument of this table is the Fundamental Argument.

Principal Term of the Latitude.

TABLE LXX—Continued.

Arg.	d. o	Daily Motion.	d. 8	Daily Motion.	d. 16	Daily Motion.	d. 24	Daily Motion.	d. 32	Daily Motion.
d.	° / ' "	"	° / ' "	"	° / ' "	"	° / ' "	"	° / ' "	"
2160	+2 4 6.01	+3.001	+2 4 29.92	+2.977	+2 4 53.64	+2.954	+2 5 17.19	+2.931	+2 5 40.54	+2.908
2200	2 6 3.71	2.885	2 6 26.70	2.862	2 6 49.50	2.838	2 7 12.11	2.815	2 7 34.54	2.792
2240	2 7 56.77	2.768	2 8 18.83	2.745	2 8 40.69	2.721	2 9 2.37	2.698	2 9 23.85	2.675
2280	2 9 45.16	2.651	2 10 6.27	2.628	2 10 27.20	2.604	2 10 47.93	2.580	2 11 8.48	2.557
2320	2 11 28.84	2.533	2 11 49.00	2.509	2 12 8.98	2.486	2 12 28.77	2.462	2 12 48.37	2.439
2360	2 13 7.79	2.415	2 13 27.01	2.391	2 13 46.05	2.367	2 14 4.88	2.343	2 14 23.53	2.319
2400	2 14 41.99	2.296	2 15 0.26	2.272	2 15 18.34	2.248	2 15 36.22	2.224	2 15 53.92	2.200
2440	2 16 11.43	2.176	2 16 28.74	2.152	2 16 45.86	2.129	2 17 2.80	2.105	2 17 19.54	2.081
2480	2 17 36.08	2.057	2 17 52.44	2.033	2 18 8.61	2.009	2 18 24.58	1.985	2 18 40.36	1.961
2520	2 18 55.95	1.937	2 19 11.35	1.913	2 19 26.56	1.889	2 19 41.57	1.865	2 19 56.40	1.841
2560	2 20 11.03	1.817	2 20 25.47	1.793	2 20 39.71	1.769	2 20 53.77	1.745	2 21 7.63	1.721
2600	2 21 21.30	1.697	2 21 34.78	1.673	2 21 48.07	1.649	2 22 1.16	1.625	2 22 14.06	1.601
2640	2 22 26.78	1.577	2 22 39.30	1.553	2 22 51.62	1.529	2 23 3.76	1.505	2 23 15.70	1.481
2680	2 23 27.45	1.457	2 23 39.01	1.433	2 23 50.38	1.409	2 24 1.55	1.385	2 24 12.54	1.361
2720	2 24 23.33	1.337	2 24 33.93	1.313	2 24 44.34	1.289	2 24 54.56	1.265	2 25 4.58	1.241
2760	2 25 14.42	1.218	2 25 24.07	1.194	2 25 33.52	1.170	2 25 42.78	1.146	2 25 51.85	1.122
2800	2 26 0.73	1.098	2 26 9.42	1.074	2 26 17.92	1.050	2 26 26.22	1.027	2 26 34.34	1.003
2840	2 26 42.27	0.979	2 26 50.01	0.955	2 26 57.56	0.932	2 27 4.92	0.908	2 27 12.09	0.884
2880	2 27 19.06	0.860	2 27 25.85	0.837	2 27 32.45	0.813	2 27 38.87	0.790	2 27 45.09	0.766
2920	2 27 51.12	0.742	2 27 56.96	0.719	2 28 2.62	0.695	2 28 8.09	0.672	2 28 13.37	0.648
2960	2 28 18.46	0.625	2 28 23.36	0.601	2 28 28.08	0.578	2 28 32.61	0.554	2 28 36.95	0.531
3000	2 28 41.10	0.507	2 28 45.07	0.484	2 28 48.85	0.461	2 28 52.44	0.438	2 28 55.85	0.414
3040	2 28 59.07	0.391	2 29 2.11	0.368	2 29 4.96	0.345	2 29 7.62	0.321	2 29 10.10	0.298
3080	2 29 12.40	0.275	2 29 14.51	0.252	2 29 16.44	0.229	2 29 18.18	0.206	2 29 19.73	0.183
3120	2 29 21.11	0.160	2 29 22.30	0.137	2 29 23.30	+0.114	2 29 24.12	+0.091	2 29 24.77	+0.069
3160	2 29 25.22	+0.046	2 29 25.50	+0.023	2 29 25.60	0.000	2 29 25.51	-0.023	2 29 25.24	-0.045
3200	2 29 24.78	-0.068	2 29 24.15	-0.091	2 29 23.33	-0.113	2 29 22.34	-0.136	2 29 21.17	-0.158
3240	2 29 19.81	0.180	2 29 18.28	0.203	2 29 16.57	0.225	2 29 14.68	0.248	2 29 12.60	0.270
3280	2 29 10.35	0.292	2 29 7.93	0.315	2 29 5.32	0.337	2 29 2.54	0.359	2 28 59.58	0.381
3320	2 28 56.44	0.404	2 28 53.12	0.426	2 28 49.63	0.448	2 28 45.96	0.470	2 28 42.12	0.491
3360	2 28 38.10	0.513	2 28 33.91	0.535	2 28 29.54	0.557	2 28 25.00	0.579	2 28 20.28	0.601
3400	2 28 15.39	0.623	2 28 10.32	0.644	2 28 5.08	0.666	2 27 59.67	0.687	2 27 54.09	0.709
3440	2 27 48.33	0.730	2 27 42.40	0.752	2 27 36.31	0.773	2 27 30.03	0.795	2 27 23.59	0.816
3480	2 27 16.98	0.837	2 27 10.19	0.859	2 27 3.24	0.880	2 26 56.12	0.901	2 26 48.83	0.922
3520	2 26 41.37	0.943	2 26 33.74	0.964	2 26 25.94	0.985	2 26 17.98	1.006	2 26 9.85	1.027
3560	2 26 1.55	1.048	2 25 53.08	1.069	2 25 44.45	1.090	2 25 35.65	1.110	2 25 26.69	1.131
3600	2 25 17.56	1.151	2 25 8.27	1.172	2 24 58.81	1.193	2 24 49.19	1.213	2 24 39.40	1.234
3640	2 24 29.45	1.254	2 24 19.31	1.274	2 24 9.06	1.295	2 23 58.63	1.315	2 23 48.03	1.335
3680	2 23 37.27	1.355	2 23 26.35	1.375	2 23 15.27	1.395	2 23 4.03	1.416	2 22 52.62	1.436
3720	2 22 41.06	1.455	2 22 29.34	1.475	2 22 17.46	1.495	2 22 5.43	1.515	2 21 53.23	1.534
3760	2 21 40.88	1.554	2 21 28.37	1.574	2 21 15.70	1.593	2 21 2.88	1.613	2 20 49.90	1.632
3800	2 20 36.77	1.651	2 20 23.48	1.671	2 20 10.04	1.690	2 19 56.44	1.710	2 19 42.69	1.729
3840	2 19 28.78	1.748	2 19 14.73	1.766	2 19 0.52	1.786	2 18 46.16	1.805	2 18 31.64	1.824
3880	2 18 16.98	1.843	2 18 2.16	1.862	2 17 47.19	1.880	2 17 32.08	1.899	2 17 16.81	1.918
3920	2 17 1.39	1.937	2 16 45.83	1.955	2 16 30.12	1.974	2 16 14.26	1.992	2 15 58.25	2.010
3960	2 15 42.09	2.029	2 15 25.79	2.047	2 15 9.34	2.065	2 14 52.75	2.084	2 14 36.01	2.102
4000	2 14 19.13	2.120	2 14 2.10	2.138	2 13 44.93	2.156	2 13 27.62	2.174	2 13 10.16	2.192
4040	2 12 52.55	2.209	2 12 34.81	2.227	2 12 16.93	2.245	2 11 58.90	2.262	2 11 40.73	2.280
4080	2 11 22.42	2.297	2 11 3.98	2.315	2 10 45.39	2.332	2 10 26.66	2.350	2 10 7.80	2.367
4120	2 9 48.79	2.384	2 9 29.65	2.402	2 9 10.37	2.419	2 8 50.96	2.436	2 8 31.41	2.453
4160	2 8 11.72	2.470	2 7 51.90	2.487	2 7 31.94	2.504	2 7 11.84	2.520	2 6 51.62	2.537
4200	2 6 31.26	2.554	2 6 10.76	2.570	2 5 50.14	2.587	2 5 29.38	2.603	2 5 8.49	2.620
4240	2 4 47.47	2.636	2 4 26.31	2.653	2 4 5.03	2.669	2 3 43.62	2.685	2 3 22.07	2.701
4280	+2 3 0.40	-2.717	+2 2 38.60	-2.733	+2 2 16.67	-2.749	+2 1 54.62	-2.765	+2 1 32.43	-2.781

The Argument of this table is the Fundamental Argument.

Principal Term of the Latitude.

TABLE LXX—Continued.

Arg.	d. o	Daily Motion.	d. 8	Daily Motion.	d. 16	Daily Motion.	d. 24	Daily Motion.	d. 32	Daily Motion.
d.	° / ' "	"	° / ' "	"	° / ' "	"	° / ' "	"	° / ' "	"
4320	+2 1 10.12	-2.797	+2 0 47.69	-2.813	+2 0 25.13	-2.828	+2 0 2.44	-2.844	+1 59 39.63	-2.860
4360	1 59 16.69	2.875	1 58 53.63	2.891	1 58 30.44	2.906	1 58 7.14	2.921	1 57 43.71	2.936
4400	1 57 20.16	2.952	1 56 56.49	2.967	1 56 32.69	2.982	1 56 8.78	2.997	1 55 44.75	3.012
4440	1 55 20.59	3.027	1 54 56.31	3.042	1 54 31.92	3.057	1 54 7.41	3.071	1 53 42.78	3.086
4480	1 53 18.04	3.101	1 52 53.18	3.115	1 52 28.20	3.130	1 52 3.11	3.144	1 51 37.90	3.159
4520	1 51 12.58	3.173	1 50 47.14	3.187	1 50 21.58	3.201	1 49 55.92	3.215	1 49 30.14	3.230
4560	1 49 4.25	3.244	1 48 38.25	3.258	1 48 12.14	3.272	1 47 45.91	3.285	1 47 19.58	3.299
4600	1 46 53.13	3.313	1 46 26.58	3.326	1 45 59.91	3.340	1 45 33.14	3.354	1 45 6.26	3.367
4640	1 44 39.27	3.381	1 44 12.18	3.394	1 43 44.98	3.407	1 43 17.67	3.420	1 42 50.26	3.433
4680	1 42 22.73	3.447	1 41 55.12	3.460	1 41 27.40	3.473	1 40 59.57	3.486	1 40 31.64	3.498
4720	1 40 3.60	3.511	1 39 35.47	3.524	1 39 7.23	3.536	1 38 38.89	3.549	1 38 10.45	3.562
4760	1 37 41.91	3.574	1 37 13.27	3.587	1 36 44.53	3.599	1 36 15.69	3.611	1 35 46.76	3.623
4800	1 35 17.73	3.635	1 34 48.60	3.648	1 34 19.37	3.660	1 33 50.05	3.672	1 33 20.63	3.684
4840	1 32 51.12	3.696	1 32 21.51	3.707	1 31 51.80	3.719	1 31 22.01	3.731	1 30 52.12	3.742
4880	1 30 22.14	3.754	1 29 52.07	3.765	1 29 21.91	3.777	1 28 51.65	3.788	1 28 21.31	3.799
4920	1 27 50.87	3.811	1 27 20.34	3.822	1 26 49.73	3.833	1 26 19.03	3.844	1 25 48.24	3.855
4960	1 25 17.36	3.866	1 24 46.40	3.876	1 24 15.34	3.887	1 23 44.21	3.898	1 23 12.98	3.909
5000	1 22 41.68	3.919	1 22 10.29	3.930	1 21 38.81	3.940	1 21 7.25	3.951	1 20 35.61	3.961
5040	1 20 3.88	3.971	1 19 32.08	3.981	1 19 0.19	3.991	1 18 28.22	4.001	1 17 56.17	4.011
5080	1 17 24.05	4.021	1 16 51.84	4.031	1 16 19.56	4.041	1 15 47.19	4.051	1 15 14.75	4.061
5120	1 14 42.23	4.070	1 14 9.63	4.080	1 13 36.96	4.089	1 13 4.21	4.098	1 12 31.39	4.108
5160	1 11 58.50	4.117	1 11 25.53	4.126	1 10 52.49	4.135	1 10 19.37	4.145	1 9 46.18	4.154
5200	1 9 12.92	4.163	1 8 39.58	4.172	1 8 6.18	4.180	1 7 32.70	4.189	1 6 59.16	4.198
5240	1 6 25.55	4.206	1 5 51.87	4.215	1 5 18.12	4.223	1 4 44.30	4.232	1 4 10.41	4.240
5280	1 3 36.46	4.249	1 3 2.44	4.257	1 2 28.36	4.265	1 1 54.21	4.273	1 1 20.00	4.281
5320	1 0 45.72	4.289	1 0 11.38	4.297	0 59 36.98	4.305	0 59 2.51	4.313	0 58 27.98	4.320
5360	0 57 53.40	4.328	0 57 18.75	4.335	0 56 44.04	4.343	0 56 9.27	4.350	0 55 34.44	4.358
5400	0 54 59.55	4.365	0 54 24.61	4.372	0 53 49.60	4.379	0 53 14.54	4.387	0 52 39.42	4.394
5440	0 52 4.25	4.401	0 51 29.02	4.407	0 50 53.74	4.414	0 50 18.40	4.421	0 49 43.01	4.428
5480	0 49 7.57	4.434	0 48 32.07	4.441	0 47 56.52	4.447	0 47 20.92	4.454	0 46 45.27	4.460
5520	0 46 9.56	4.466	0 45 33.81	4.473	0 44 58.01	4.479	0 44 22.16	4.485	0 43 46.26	4.491
5560	0 43 10.31	4.497	0 42 34.32	4.503	0 41 58.28	4.508	0 41 22.19	4.514	0 40 46.06	4.520
5600	0 40 9.88	4.526	0 39 33.66	4.531	0 38 57.39	4.537	0 38 21.08	4.542	0 37 44.73	4.547
5640	0 37 8.33	4.552	0 36 31.90	4.558	0 35 55.42	4.563	0 35 18.90	4.568	0 34 42.34	4.573
5680	0 34 5.74	4.578	0 33 29.10	4.583	0 32 52.43	4.587	0 32 15.72	4.592	0 31 38.97	4.596
5720	0 31 2.18	4.601	0 30 25.36	4.605	0 29 48.50	4.610	0 29 11.61	4.614	0 28 34.68	4.619
5760	0 27 57.71	4.623	0 27 20.71	4.627	0 26 43.69	4.631	0 26 6.62	4.635	0 25 29.53	4.639
5800	0 24 52.41	4.643	0 24 15.26	4.646	0 23 38.07	4.650	0 23 0.86	4.654	0 22 23.62	4.658
5840	0 21 46.35	4.661	0 21 9.05	4.665	0 20 31.72	4.668	0 19 54.37	4.671	0 19 16.99	4.674
5880	0 18 39.59	4.677	0 18 2.16	4.680	0 17 24.71	4.683	0 16 47.24	4.686	0 16 9.74	4.689
5920	0 15 32.22	4.692	0 14 54.67	4.695	0 14 17.11	4.697	0 13 39.52	4.700	0 13 1.92	4.702
5960	0 12 24.29	4.705	0 11 46.65	4.707	0 11 8.99	4.709	0 10 31.31	4.712	0 9 53.61	4.714
6000	0 9 15.89	4.716	0 8 38.16	4.718	0 8 0.42	4.720	0 7 22.65	4.721	0 6 44.88	4.723
6040	0 6 7.09	4.725	0 5 29.29	4.726	0 4 51.48	4.728	0 4 13.65	4.729	0 3 35.81	4.731
6080	+0 2 57.96	4.732	+0 2 20.10	4.734	+0 1 42.23	4.735	+0 1 4.36	4.736	+0 0 26.47	4.737
6120	-0 0 11.42	4.738	-0 0 49.32	4.738	-0 1 27.23	4.739	-0 2 5.14	4.740	-0 2 43.06	4.741
6160	0 3 0.99	4.741	0 3 58.91	4.742	0 4 36.85	4.742	0 5 14.78	4.742	0 5 52.72	4.743
6200	0 6 30.66	4.743	0 7 8.59	4.743	0 7 46.53	4.743	0 8 24.48	4.743	0 9 2.42	4.743
6240	0 9 40.35	4.743	0 10 18.29	4.742	0 10 56.23	4.742	0 11 34.16	4.742	0 12 12.08	4.741
6280	0 12 50.01	4.741	0 13 27.93	4.740	0 14 5.84	4.739	0 14 43.74	4.738	0 15 21.64	4.737
6320	0 15 59.54	4.736	0 16 37.42	4.735	0 17 15.30	4.734	0 17 53.16	4.733	0 18 31.02	4.732
6360	0 19 8.87	4.731	0 19 46.70	4.729	0 20 24.52	4.728	0 21 2.34	4.726	0 21 40.13	4.724
6400	0 22 17.92	4.723	0 22 55.69	4.721	0 23 33.44	4.719	0 24 11.18	4.717	0 24 48.90	4.715
6440	-0 25 26.61	-4.713	-0 26 4.30	-4.711	-0 26 41.97	-4.708	-0 27 19.63	-4.706	-0 27 57.26	-4.703

The Argument of this table is the Fundamental Argument.

Principal Term of the Latitude.

TABLE LXX—Continued.

Arg.	d. o	Daily Motion.	d. 8	Daily Motion.	d. 16	Daily Motion.	d. 24	Daily Motion.	d. 32	Daily Motion.
d.	° / ' "	"	° / ' "	"	° / ' "	"	° / ' "	"	° / ' "	"
6480	—0 28 34.87	—4.701	—0 29 12.46	—4.698	—0 29 50.03	—4.695	—0 30 27.58	—4.693	—0 31 5.11	—4.690
6520	0 31 42.62	4.687	0 32 20.10	4.684	0 32 57.55	4.681	0 33 34.98	4.678	0 34 12.39	4.674
6560	0 34 49.77	4.671	0 35 27.12	4.668	0 36 4.44	4.664	0 36 41.74	4.661	0 37 19.00	4.657
6600	0 37 56.24	4.653	0 38 33.45	4.650	0 39 10.63	4.646	0 39 47.77	4.641	0 40 24.88	4.637
6640	0 41 1.96	4.633	0 41 39.01	4.629	0 42 16.02	4.625	0 42 53.00	4.620	0 43 29.94	4.616
6680	0 44 6.85	4.612	0 44 43.72	4.607	0 45 20.55	4.602	0 45 57.34	4.597	0 46 34.10	4.592
6720	0 47 10.81	4.587	0 47 47.48	4.582	0 48 24.12	4.577	0 49 0.71	4.572	0 49 37.26	4.567
6760	0 50 13.77	4.561	0 50 50.24	4.556	0 51 26.66	4.550	0 52 3.03	4.544	0 52 39.36	4.539
6800	0 53 15.65	4.533	0 53 51.88	4.527	0 54 28.07	4.521	0 55 4.21	4.515	0 55 40.31	4.509
6840	0 56 16.35	4.503	0 56 52.35	4.497	0 57 28.29	4.490	0 58 4.18	4.483	0 58 40.02	4.477
6880	0 59 15.80	4.470	0 59 51.54	4.463	1 0 27.21	4.457	1 1 2.84	4.450	1 1 38.41	4.443
6920	1 2 13.92	4.436	1 2 49.37	4.429	1 3 24.77	4.421	1 4 0.11	4.414	1 4 35.39	4.407
6960	1 5 10.61	4.399	1 5 45.77	4.391	1 6 20.87	4.384	1 6 55.90	4.376	1 7 30.88	4.368
7000	1 8 5.79	4.360	1 8 40.64	4.352	1 9 15.42	4.344	1 9 50.14	4.336	1 10 24.79	4.328
7040	1 10 59.37	4.319	1 11 33.89	4.311	1 12 8.34	4.302	1 12 42.72	4.294	1 13 17.03	4.285
7080	1 13 51.27	4.276	1 14 25.44	4.267	1 14 59.54	4.258	1 15 33.57	4.249	1 16 7.52	4.240
7120	1 16 41.40	4.231	1 17 15.21	4.221	1 17 48.94	4.212	1 18 22.60	4.202	1 18 56.18	4.193
7160	1 19 29.68	4.183	1 20 3.10	4.173	1 20 36.44	4.164	1 21 9.71	4.154	1 21 42.90	4.144
7200	1 22 16.00	4.133	1 22 49.03	4.123	1 23 21.97	4.113	1 23 54.83	4.102	1 24 27.60	4.092
7240	1 25 0.29	4.081	1 25 32.88	4.071	1 26 5.42	4.060	1 26 37.85	4.049	1 27 10.20	4.038
7280	1 27 42.46	4.027	1 28 14.63	4.016	1 28 46.71	4.005	1 29 18.70	3.994	1 29 50.61	3.982
7320	1 30 22.41	3.971	1 30 54.13	3.959	1 31 25.76	3.948	1 31 57.29	3.936	1 32 28.72	3.924
7360	1 33 0.06	3.912	1 33 31.31	3.900	1 34 2.46	3.888	1 34 33.51	3.876	1 35 4.47	3.863
7400	1 35 35.32	3.851	1 36 6.08	3.839	1 36 36.73	3.826	1 37 7.29	3.813	1 37 37.74	3.801
7440	1 38 8.10	3.788	1 38 38.34	3.775	1 39 8.49	3.762	1 39 38.53	3.749	1 40 8.46	3.736
7480	1 40 38.30	3.722	1 41 8.02	3.709	1 41 37.64	3.696	1 42 7.15	3.682	1 42 36.54	3.668
7520	1 43 5.83	3.655	1 43 35.01	3.641	1 44 4.08	3.627	1 44 33.04	3.613	1 45 1.89	3.599
7560	1 45 30.62	3.585	1 45 59.24	3.570	1 46 27.74	3.556	1 46 56.13	3.542	1 47 24.40	3.527
7600	1 47 52.56	3.512	1 48 20.60	3.498	1 48 48.52	3.483	1 49 16.32	3.468	1 49 44.00	3.453
7640	1 50 11.56	3.438	1 50 39.00	3.423	1 51 6.32	3.407	1 51 33.52	3.392	1 52 0.59	3.376
7680	1 52 27.54	3.361	1 52 54.36	3.345	1 53 21.06	3.330	1 53 47.63	3.314	1 54 14.08	3.298
7720	1 54 40.40	3.282	1 55 6.59	3.266	1 55 32.65	3.250	1 55 58.58	3.234	1 56 24.38	3.217
7760	1 56 50.05	3.200	1 57 15.59	3.184	1 57 40.99	3.167	1 58 6.26	3.151	1 58 31.40	3.134
7800	1 58 56.41	3.117	1 59 21.28	3.100	1 59 46.01	3.083	2 0 10.61	3.066	2 0 35.06	3.048
7840	2 0 59.38	3.031	2 1 23.56	3.014	2 1 47.59	2.996	2 2 11.49	2.979	2 2 35.25	2.961
7880	2 2 58.87	2.944	2 3 22.35	2.926	2 3 45.68	2.908	2 4 8.87	2.889	2 4 31.91	2.871
7920	2 4 54.80	2.853	2 5 17.55	2.835	2 5 40.16	2.816	2 6 2.61	2.798	2 6 24.92	2.779
7960	2 6 47.08	2.761	2 7 9.09	2.742	2 7 30.95	2.723	2 7 52.66	2.704	2 8 14.21	2.685
8000	2 8 35.62	2.666	2 8 56.87	2.647	2 9 17.96	2.628	2 9 38.91	2.608	2 9 59.69	2.589
8040	2 10 20.33	2.569	2 10 40.80	2.550	2 11 1.12	2.530	2 11 21.28	2.510	2 11 41.28	2.490
8080	2 12 1.12	2.470	2 12 20.80	2.450	2 12 40.32	2.430	2 12 59.68	2.410	2 13 18.88	2.390
8120	2 13 37.91	2.369	2 13 56.78	2.349	2 14 15.49	2.328	2 14 34.04	2.308	2 14 52.41	2.287
8160	2 15 10.62	2.266	2 15 28.67	2.245	2 15 46.54	2.224	2 16 4.25	2.203	2 16 21.79	2.182
8200	2 16 39.17	2.161	2 16 56.37	2.140	2 17 13.40	2.118	2 17 30.26	2.097	2 17 46.95	2.075
8240	2 18 3.46	2.053	2 18 19.80	2.032	2 18 35.97	2.010	2 18 51.96	1.988	2 19 7.78	1.966
8280	2 19 23.42	1.944	2 19 38.89	1.922	2 19 54.18	1.900	2 20 9.29	1.878	2 20 24.22	1.855
8320	2 20 38.98	1.833	2 20 53.55	1.811	2 21 7.94	1.788	2 21 22.16	1.765	2 21 36.19	1.743
8360	2 21 50.04	1.720	2 22 3.70	1.697	2 22 17.19	1.674	2 22 30.49	1.651	2 22 43.60	1.628
8400	2 22 56.53	1.605	2 23 9.28	1.582	2 23 21.84	1.558	2 23 34.21	1.535	2 23 46.40	1.511
8440	2 23 58.39	1.488	2 24 10.20	1.464	2 24 21.82	1.441	2 24 33.25	1.417	2 24 44.49	1.393
8480	2 24 55.54	1.369	2 25 6.40	1.345	2 25 17.06	1.321	2 25 27.53	1.297	2 25 37.82	1.273
8520	2 25 47.90	1.249	2 25 57.80	1.225	2 26 7.50	1.200	2 26 17.00	1.176	2 26 26.30	1.151
8560	2 26 35.41	1.126	2 26 44.33	1.102	2 26 53.04	1.077	2 27 1.56	1.053	2 27 9.89	1.028
8600	—2 27 18.01	—1.003	—2 27 25.93	—0.978	—2 27 33.66	—0.953	—2 27 41.18	—0.928	—2 27 48.50	—0.902

The Argument of this table is the Fundamental Argument.

Principal Term of the Latitude.

TABLE LXX—Continued.

Arg.	d. o	Daily Motion.	d. g	Daily Motion.	d. 16	Daily Motion.	d. 24	Daily Motion.	d. 32	Daily Motion.
d.	° / "	"	° / "	"	° / "	"	° / "	"	° / "	"
8640	-2 27 55.62	-0.877	-2 28 2.54	-0.852	-2 28 9.25	-0.827	-2 28 15.76	-0.801	-2 28 22.08	-0.776
8680	2 28 28.18	0.751	2 28 34.09	0.725	2 28 39.78	0.699	2 28 45.28	0.674	2 28 50.56	0.648
8720	2 28 55.65	0.622	2 29 0.52	0.596	2 29 5.19	0.570	2 29 9.65	0.544	2 29 13.90	0.518
8760	2 29 17.94	0.492	2 29 21.78	0.466	2 29 25.41	0.440	2 29 28.82	0.414	2 29 32.03	0.388
8800	2 29 35.03	0.361	2 29 37.82	0.335	2 29 40.39	0.309	2 29 42.75	0.282	2 29 44.91	0.256
8840	2 29 46.85	0.229	2 29 48.57	0.202	2 29 50.09	0.176	2 29 51.39	0.149	2 29 52.48	-0.123
8880	2 29 53.35	-0.096	2 29 54.01	-0.069	2 29 54.46	-0.042	2 29 54.69	-0.015	2 29 54.70	+0.012
8920	2 29 54.50	+0.039	2 29 54.09	+0.066	2 29 53.45	+0.093	2 29 52.60	+0.120	2 29 51.54	0.147
8960	2 29 50.26	0.174	2 29 48.76	0.201	2 29 47.04	0.228	2 29 45.10	0.256	2 29 42.95	0.283
9000	2 29 40.57	0.311	2 29 37.98	0.338	2 29 35.17	0.365	2 29 32.14	0.392	2 29 28.89	0.420
9040	2 29 25.42	0.447	2 29 21.73	0.475	2 29 17.83	0.503	2 29 13.70	0.530	2 29 9.34	0.558
9080	2 29 4.77	0.586	2 28 59.98	0.613	2 28 54.96	0.641	2 28 49.73	0.668	2 28 44.27	0.696
9120	2 28 38.60	0.724	2 28 32.70	0.751	2 28 26.57	0.779	2 28 20.23	0.807	2 28 13.66	0.835
9160	2 28 6.87	0.863	2 27 59.86	0.891	2 27 52.62	0.918	2 27 45.17	0.946	2 27 37.49	0.974
9200	2 27 29.58	1.002	2 27 21.46	1.030	2 27 13.11	1.058	2 27 4.54	1.086	2 26 55.74	1.114
9240	2 26 46.72	1.142	2 26 37.47	1.170	2 26 28.01	1.198	2 26 18.32	1.226	2 26 8.40	1.253
9280	2 25 58.27	1.281	2 25 47.90	1.309	2 25 37.32	1.337	2 25 26.51	1.365	2 25 15.48	1.393
9320	2 25 4.22	1.421	2 24 52.74	1.449	2 24 41.03	1.477	2 24 29.11	1.505	2 24 16.96	1.533
9360	2 24 4.58	1.561	2 23 51.98	1.589	2 23 39.16	1.617	2 23 26.12	1.645	2 23 12.85	1.673
9400	2 22 59.35	1.701	2 22 45.64	1.729	2 22 31.70	1.757	2 22 17.54	1.784	2 22 3.15	1.812
9440	2 21 48.55	1.840	2 21 33.72	1.868	2 21 18.66	1.896	2 21 3.39	1.923	2 20 47.89	1.951
9480	2 20 32.17	1.979	2 20 16.23	2.007	2 20 0.07	2.034	2 19 43.69	2.062	2 19 27.08	2.090
9520	2 19 10.26	2.117	2 18 53.21	2.145	2 18 35.94	2.172	2 18 18.46	2.200	2 18 0.75	2.227
9560	2 17 42.82	2.255	2 17 24.68	2.282	2 17 6.31	2.310	2 16 47.72	2.337	2 16 28.92	2.365
9600	2 16 9.90	2.392	2 15 50.66	2.419	2 15 31.20	2.446	2 15 11.52	2.474	2 14 51.62	2.501
9640	2 14 31.51	2.528	2 14 11.18	2.555	2 13 50.64	2.582	2 13 29.88	2.609	2 13 8.90	2.636
9680	2 12 47.71	2.663	2 12 26.30	2.689	2 12 4.68	2.716	2 11 42.85	2.743	2 11 20.80	2.770
9720	2 10 58.54	2.797	2 10 36.06	2.823	2 10 13.37	2.850	2 9 50.47	2.876	2 9 27.36	2.903
9760	2 9 4.04	2.929	2 8 40.50	2.955	2 8 16.76	2.982	2 7 52.80	3.008	2 7 28.64	3.034
9800	2 7 4.27	3.060	2 6 39.69	3.086	2 6 14.90	3.112	2 5 49.91	3.138	2 5 24.70	3.164
9840	2 4 59.30	3.189	2 4 33.68	3.215	2 4 7.86	3.241	2 3 41.84	3.266	2 3 15.61	3.291
9880	2 2 49.18	3.317	2 2 22.55	3.342	2 1 55.71	3.367	2 1 28.68	3.393	2 1 1.44	3.418
9920	2 0 34.00	3.443	2 0 6.36	3.468	1 59 38.52	3.493	1 59 10.48	3.517	1 58 42.25	3.542
9960	1 58 13.82	3.566	1 57 45.19	3.591	1 57 16.37	3.615	1 56 47.35	3.640	1 56 18.14	3.664
10000	1 55 48.73	3.689	1 55 19.13	3.713	1 54 49.34	3.736	1 54 19.35	3.760	1 53 49.18	3.784
10040	1 53 18.82	3.808	1 52 48.27	3.831	1 52 17.53	3.855	1 51 46.60	3.878	1 51 15.48	3.902
10080	1 50 44.17	3.925	1 50 12.68	3.948	1 49 41.01	3.971	1 49 9.15	3.994	1 48 37.11	4.017
10120	1 48 4.89	4.039	1 47 32.49	4.062	1 46 59.91	4.085	1 46 27.14	4.107	1 45 54.20	4.130
10160	1 45 21.08	4.152	1 44 47.78	4.174	1 44 14.30	4.196	1 43 40.65	4.217	1 43 6.83	4.239
10200	1 42 32.84	4.261	1 41 58.67	4.282	1 41 24.33	4.304	1 40 49.81	4.325	1 40 15.13	4.346
10240	1 39 40.28	4.367	1 39 5.26	4.388	1 38 30.07	4.409	1 37 54.72	4.430	1 37 19.21	4.450
10280	1 36 43.53	4.470	1 36 7.69	4.491	1 35 31.68	4.511	1 34 55.52	4.531	1 34 19.19	4.551
10320	1 33 42.70	4.571	1 33 6.06	4.591	1 32 29.26	4.610	1 31 52.30	4.630	1 31 15.19	4.649
10360	1 30 37.93	4.668	1 30 0.51	4.687	1 29 22.94	4.706	1 28 45.22	4.725	1 28 7.35	4.744
10400	1 27 29.33	4.762	1 26 51.16	4.781	1 26 12.85	4.799	1 25 34.39	4.817	1 24 55.79	4.835
10440	1 24 17.04	4.852	1 23 38.16	4.870	1 22 59.13	4.888	1 22 19.96	4.905	1 21 40.66	4.923
10480	1 21 1.21	4.940	1 20 21.63	4.957	1 19 41.91	4.973	1 19 2.07	4.990	1 18 22.09	5.006
10520	1 17 41.97	5.023	1 17 1.73	5.039	1 16 21.36	5.055	1 15 40.86	5.071	1 15 0.23	5.087
10560	1 14 19.48	5.103	1 13 38.60	5.118	1 12 57.60	5.133	1 12 16.47	5.148	1 11 35.23	5.163
10600	1 10 53.87	5.178	1 10 12.39	5.193	1 9 30.79	5.208	1 8 49.08	5.222	1 8 7.25	5.236
10640	1 7 25.30	5.250	1 6 43.25	5.264	1 6 1.08	5.278	1 5 18.81	5.292	1 4 36.43	5.305
10680	1 3 53.94	5.318	1 3 11.35	5.331	1 2 28.65	5.344	1 1 45.84	5.357	1 1 2.94	5.370
10720	1 0 19.93	5.383	0 59 36.83	5.395	0 58 53.62	5.407	0 58 10.32	5.419	0 57 26.93	5.431
10760	-0 56 43.44	+5.442	-0 55 59.86	+5.454	-0 55 16.19	+5.465	-0 54 32.42	+5.477	-0 53 48.57	+5.488

The Argument of this table is the Fundamental Argument.

Supplementary Table for obtaining the Orbit Longitude.

TABLE LXXI.

Year.	Long. of the Ascending Node.			Correction to be added to the Elliptic Longitude.				Correction to be added to the Elliptic Longitude.									
	°	'	"	Arg.	Value for 1850.		Secular Variation.	Arg.	Arg.	Value for 1850.		Secular Variation.	Arg.				
1600	110	9.4	+10.5	0	180	+0 0.00	-3.41	-0.00	+180	360	45	225	+1 37.75	-0.06	-0.29	+135	315
1620	110	19.9	10.5	1	181	0 3.41	3.41	0.01	179	359	46	226	1 37.69	0.18	0.29	134	314
1640	110	30.4	10.5	2	182	0 6.82	3.40	0.02	178	358	47	227	1 37.51	0.30	0.29	133	313
1660	110	40.9	10.5	3	183	0 10.22	3.39	0.03	177	357	48	228	1 37.21	0.41	0.29	132	312
1680	110	51.4	10.6	4	184	0 13.61	3.37	0.04	176	356	49	229	1 36.80	0.54	0.29	131	311
1700	111	2.0	10.5	5	185	0 16.98	3.35	0.05	175	355	50	230	1 36.26	0.65	0.28	130	310
1720	111	12.5	10.5	6	186	0 20.33	3.33	0.06	174	354	51	231	1 35.61	0.77	0.28	129	309
1740	111	23.0	10.5	7	187	0 23.66	3.30	0.07	173	353	52	232	1 34.84	0.88	0.28	128	308
1760	111	33.5	10.6	8	188	0 26.96	3.26	0.08	172	352	53	233	1 33.96	1.00	0.28	127	307
1780	111	44.1	10.5	9	189	0 30.22	3.23	0.09	171	351	54	234	1 32.96	1.12	0.27	126	306
1800	111	54.6	10.5	10	190	0 33.45	3.19	0.10	170	350	55	235	1 31.84	1.22	0.27	125	305
1820	112	5.1	10.5	11	191	0 36.64	3.14	0.11	169	349	56	236	1 30.62	1.33	0.27	124	304
1840	112	15.6	10.5	12	192	0 39.78	3.09	0.12	168	348	57	237	1 29.29	1.45	0.26	123	303
1860	112	26.2	10.6	13	193	0 42.87	3.04	0.13	167	347	58	238	1 27.84	1.55	0.26	122	302
1880	112	36.7	10.5	14	194	0 45.91	2.99	0.14	166	346	59	239	1 26.29	1.65	0.25	121	301
1900	112	47.2	10.6	15	195	0 48.90	2.92	0.14	165	345	60	240	1 24.64	1.76	0.25	120	300
1920	112	57.8	10.5	16	196	0 51.82	2.86	0.15	164	344	61	241	1 22.88	1.86	0.24	119	299
1940	113	8.3	10.5	17	197	0 54.68	2.80	0.16	163	343	62	242	1 21.02	1.96	0.24	118	298
1960	113	18.8	10.6	18	198	0 57.48	2.73	0.17	162	342	63	243	1 19.06	2.05	0.23	117	297
1980	113	29.4	+10.5	19	199	1 0.21	2.65	0.18	161	341	64	244	1 17.01	2.15	0.23	116	296
2000	113	39.9		20	200	1 2.86	2.57	0.19	160	340	65	245	1 14.86	2.24	0.22	115	295
				21	201	1 5.43	2.50	0.19	159	339	66	246	1 12.62	2.32	0.21	114	294
				22	202	1 7.93	2.41	0.20	158	338	67	247	1 10.30	2.42	0.21	113	293
				23	203	1 10.34	2.33	0.21	157	337	68	248	1 7.88	2.49	0.20	112	292
				24	204	1 12.67	2.24	0.21	156	336	69	249	1 5.39	2.58	0.19	111	291
				25	205	1 14.91	2.14	0.22	155	335	70	250	1 2.81	2.65	0.19	110	290
				26	206	1 17.05	2.06	0.23	154	334	71	251	1 0.16	2.72	0.18	109	289
				27	207	1 19.11	1.95	0.23	153	333	72	252	0 57.44	2.80	0.17	108	288
				28	208	1 21.06	1.86	0.24	152	332	73	253	0 54.64	2.86	0.16	107	287
				29	209	1 22.92	1.76	0.24	151	331	74	254	0 51.78	2.92	0.15	106	286
				30	210	1 24.68	1.65	0.25	150	330	75	255	0 48.86	2.99	0.14	105	285
				31	211	1 26.33	1.55	0.25	149	329	76	256	0 45.87	3.04	0.14	104	284
				32	212	1 27.88	1.44	0.26	148	328	77	257	0 42.83	3.09	0.13	103	283
				33	213	1 29.32	1.33	0.26	147	327	78	258	0 39.74	3.14	0.12	102	282
				34	214	1 30.65	1.22	0.27	146	326	79	259	0 36.60	3.18	0.11	101	281
				35	215	1 31.87	1.11	0.27	145	325	80	260	0 33.42	3.23	0.10	100	280
				36	216	1 32.98	1.00	0.27	144	324	81	261	0 30.19	3.26	0.09	99	279
				37	217	1 33.98	0.88	0.28	143	323	82	262	0 26.93	3.29	0.08	98	278
				38	218	1 34.86	0.77	0.28	142	322	83	263	0 23.64	3.33	0.07	97	277
				39	219	1 35.63	0.65	0.28	141	321	84	264	0 20.31	3.34	0.06	96	276
				40	220	1 36.28	0.53	0.28	140	320	85	265	0 16.97	3.37	0.05	95	275
				41	221	1 36.81	0.41	0.29	139	319	86	266	0 13.60	3.39	0.04	94	274
				42	222	1 37.22	0.30	0.29	138	318	87	267	0 10.21	3.39	0.03	93	273
				43	223	1 37.52	0.18	0.29	137	317	88	268	0 6.82	3.41	0.02	92	272
				44	224	1 37.70	-0.05	0.29	136	316	89	269	+0 3.41	-3.41	-0.01	+91	271
				45	225	+1 37.75		-0.29	+135	315	90	270	0 0.00		0.00	90	270

The argument of this table is Elliptic Long. — Long. of the Ascending Node.

The signs must be read on the same side as the Argument.

TABLES
OF THE
HELIOCENTRIC MOTION OF URANUS.
BY
SIMON NEWCOMB.

A P—VOL VII, PART III—1

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P R E F A C E.

These Tables of Uranus are based on elements derived from meridian observations of the planet from the time of its discovery by **HERSCHEL** in 1781 to the opposition of 1898. The outstanding residuals between theory and observation, left in the solution of the equations, sometimes amount to one second of arc. It is not possible at the present time to decide whether these differences are real, or whether they arise from the errors of the ephemeris of comparison, which, between 1830 and 1872, was that derived from **BOUVARD's** tables. The observations since 1860 seem to be represented with great exactness.

It is both a pleasure and an act of justice to acknowledge the important part taken by assistants in the Nautical Almanac Office in the computation of the perturbations and the construction of the tables. As a general rule the part taken by the writer was confined to deriving the formulæ and methods of computation, executing in a tentative way such portions of the numerical work as would enable him to design the best forms and methods of doing it, devising the controls on its accuracy, and exercising a supervision over all its details. The definitive execution of the more difficult parts of the work was intrusted to his former students and more recent assistants, **Dr. WALTER S. HARSHMAN** and **Dr. W. S. EICHELBERGER**, whose mastery of the theory fully qualified them for the work. The periodic perturbations were mostly computed by **Dr. EICHELBERGER**; the secular terms, the developments in powers of the time, and the preliminary work on the tables by **Dr. HARSHMAN**.

In the duplicate computations, especially those of the second order, and in the final preparation of the tables, the services of **Mrs. ELIZABETH BROWN DAVIS** are especially worthy of honorable mention; and the writer recalls also the skillful work of **Mr. F. F. REISNER** and **Miss JANET MCWILLIAM** both on the theory and the tables.

WASHINGTON, *December 1, 1898.*

TABLES OF URANUS.

INTRODUCTION.

I.—BASIS OF THE TABLES.

§ 1. *Elements of Uranus.*

These tables are based on an investigation which is, as yet, unpublished. The perturbations have, for the most part, been recomputed, and the elements have been determined from the best available observations up to and including the opposition of 1897-98. These elements have been reduced to the epoch—

1900, January 0, Greenwich Mean Noon,

as the fundamental epoch of the tables.

In the construction of the tables the elements have been used as affected not only by their secular variations, but by the inequalities of long period—about 4 220 years—arising from the fact that the mean motion of Uranus is nearly twice that of Neptune.

The adopted precession is, for the sake of uniformity, that of the other planetary tables, which I have called N_0 , and is less by $0''.82$ per century than the precession N_1 derived in Volume VIII, Part I of the *Astronomical Papers*. As a change in this quantity only alters the reduction of the motion to the celestial sphere, its effect upon the computed coordinates of the planet is inappreciable in the course of any one century. The only way in which the theoretical coordinates are altered is through the circumstance that the theoretical motions of the node and perihelion are referred to the celestial sphere, so that, by the change in question, these motions referred to the equinox are altered by the amount $0''.82$ per century. The maximum effect of this alteration upon the coordinates of the planet is, in the case of the longitude, multiplied by twice the eccentricity, and, in the case of the latitude, by the inclination.

The elements of Uranus, affected by the inequality of long period for the epoch 1900, follow. In these expressions,

T is the time after 1900.0, expressed in units of 36 525 days.

Δl , $\Delta \pi$, etc., represent the inequalities of long period and secular terms subsequently tabulated.

ELEMENTS OF URANUS.

Mean longitude:

$$l = 243^\circ 21' 44''.66 + 1\,547\,634''.44 T + \Delta l$$

Mean sidereal motion in a Julian year:

$$n = 15\,426''.092\,8$$

Longitude of the perihelion:

$$\pi = 169^\circ\,2'\,55''.6 + \Delta\pi$$

Mean anomaly, counted from the fixed perihelion of 1900:

$$g = 74^\circ\,18'.817\,7 + 428^\circ\,30'.154\,7\,T + \Delta l$$

Eccentricity:

$$e = 9\,703''.590 + \Delta e'' = 0.047\,044\,33 + \Delta e$$

Longitude of the node:

$$\theta = 73^\circ\,29'\,24''.9 + 1\,834''.8\,T + \Delta\theta$$

Inclination to the ecliptic:

$$i = 0^\circ\,46'\,21''.597 + 2''.203\,T + \Delta i$$

The logarithm of the mean distance, as computed by the equation—

$$a^3 n^2 = k^2 (1 + m)$$

where, for seconds and for the Julian year—

$$\log k = 6.112\,596\,80$$

is

$$\log a = 1.282\,900\,24$$

It has received the following corrections in units of the eighth place of decimals, on account of the action of the several planets:

Action of Venus;	+	36
Earth;	+	44
Mars;	+	5
Jupiter;	+ 146 41	
Saturn;	+ 51 35	
Neptune;	— 1 74	
Sum,	+ 196 87	

Thus we have in the tables:

$$\log a = 1.283\,097\,11$$

With the mean motions for 1900 we have for the periods of revolution of the planet:

	Julian years.	Days.
Sidereal revolution	83.740 71	30 586.29
Tropical revolution	84.013 50	30 685.93

But these periods vary owing to the inequalities of long period in the mean motion.

The masses of the disturbing planets, with which the tables are finally constructed, are—

Jupiter,	$m = 1 \div 1\,047.35$
Saturn,	$m = 1 \div 3\,501.6$
Neptune,	$m = 1 \div 19\,314$

It should, however, be remarked that the perturbations were actually computed with the mass of Neptune as $1 \div 19\,700$, and that, after the construction of provisional tables based on this mass, the inequalities by Neptune were multiplied by 1.02 for the definitive tables.

This correction of the mass was derived from the measures of the satellite of Neptune, and the comparison of the provisional tables with observations from 1781 to 1896.

The action of the four inner planets has been neglected, except in the constant of $\log r$ above.

Variations of the elements.—The preceding values of the elements used contain the perturbations Δl , etc. These variations are partly secular and partly of long period, the latter depending on the action of Neptune and the argument $2g'' - g'$.

The values of the terms of long period have, for the sake of greater rigor, been computed by mechanical quadratures and the results developed in powers of the time. The results of this process are given subsequently.

§ 2. *Perturbations of Uranus.*

The general perturbations of Uranus by the three disturbing planets—Jupiter, Saturn, and Neptune—have been completely recomputed. Those by Neptune have been computed by the method of variation of elements, with certain modifications made in order to afford a test of the accuracy of the results. The terms of the perturbative function depending on the argument $2l' - l$, which give rise to inequalities of the elements having a period of 4 220 years, were included with the secular terms and their effect computed by quadratures extending rigorously from 1750 to 1950 and approximately through the period of the tables, 1600 to 2000. In the case of the other terms of the perturbative function the inequalities were only extended to quantities of the first order as to the masses.

In the case of the action of Jupiter and Saturn the developments given by HILL in *Astronomical Papers*, Vol. IV, for the action of these planets on Jupiter and Saturn, were utilized for computing the reverse action. As a guard against possible typographic errors a comparison with the original manuscripts was made if there was any reason to suspect an error, and in the case of Saturn a comparison was made with the development of R in powers of the eccentricities and inclinations. This showed an entire agreement, so far as the requirements of the present work were concerned.

In the case of these two planets the integration was first effected by HANSEN's method, so as to obtain the values of the Hansenian variables, $n\delta z$ and ν . As perturbations of the longitude in orbit were preferred for the purpose of tabulation, these variables were transformed into perturbations of orbit longitude and logarithm of radius vector.

It was essential to the completeness of the theory that terms of two dimensions in the masses of Jupiter and Saturn should be included. The computations of these terms formed by far the most complex and difficult part of the work. In their theoretical form the most simple method of computing them is that which was employed in the tables of Uranus of 1872.* But there seem to be practical difficulties in the way of deriving rigorous results by this method, and I have been led to distrust it, notwithstanding its theoretical simplicity. In the present work I have therefore adopted HANSEN's method as developed and applied by HILL in the work already quoted. The evil arising from the great number of quantities that have to be computed when this method is employed seems to be neutralized by the elegance of the processes and the certainty of the results. In the present case numerical errors were guarded against by having the work done in duplicate by different computers.

In the following pages the adopted elements and the resulting perturbations of Uranus are shown in full, except the variation of long period of the elements produced by Neptune and dependent on the argument $2g'' - g'$. These variations are given in Section II.

In the action of Jupiter and Saturn the Hansenian perturbations $n\delta z$ and ν are given, and then the result of transforming them into perturbations of the orbit longitude and logarithm of the radius vector.

Elements of Jupiter, Saturn, Uranus, and Neptune used in computing the perturbations of Uranus.

EPOCH, 1850.0.

		Jupiter.	Saturn.	Uranus.	Neptune.
		° / "	° / "	° / "	° / "
Long. of perihelion,	π	11 56 9.3	90 6 46.2	168 15 6.7	43 17 30.3
Mean longitude,	ϵ_0	159 56 26.60	14 49 34.04	28 25 17.05	335 5 38.91
Mean anomaly,	g	148 0 17.3	284 42 47.8	220 10 10.4	291 48 8.6
Longitude of Node,	θ	98 56 19.8	112 20 49.0	73 14 8.0	130 7 31.8
Inclination,	i	1 18 42.10	2 29 40.19	0 46 20.54	1 47 1.67
Eccentricity,	e	0.048 242 77	0.056 056 88	0.046 923 6	0.008 496 2
Mean motion,	n	109 256''. 555 63	43 996''. 078 44	15 425''. 752	7 864''. 935
Log mean distance,	a	0.716 233 3	0.979 681 9	1.283 104 4	1.478 141 4
Mass,	m	1 ÷ 1 047.35	1 ÷ 3 501.6	1 ÷ 22 869	1 ÷ 19 700

As the coefficients of the small perturbations of Uranus by Neptune are to remain invariable in the tables, the elements for 1900.0 were used in the computation. They are as follows:

EPOCH, 1900.0

		Uranus.	Neptune.
		° / "	° / "
Long. of perihelion,	π	169 2 31.4	43 40 59.0
Eccentricity,	e	0.047 058 2	0.008 528 3

* Smithsonian Contributions to Knowledge, No. 262, Vol. XIX.

The resulting perturbations are exhibited in tabular form in tables A to F following.

The definitions of the arguments are:

g'' , the mean anomaly of Neptune reckoned from the perihelion of 1900.

g' , the mean anomaly of Uranus.

g , the mean anomaly of Saturn from the perihelion of 1850.

g_0 , the mean anomaly of Jupiter from the perihelion of 1850.

For Uranus the mean anomaly is reckoned from the perihelion of 1850 in the case of Jupiter and Saturn, and from that of 1900 in the case of Neptune.

TABLE A.—*Periodic perturbations of the longitude, log radius vector, and latitude of Uranus by Neptune, omitting terms represented by variations of the elements dependent on the argument $2g'' - g'$.*

$g'' \quad g'$	Longitude.		$10^8 M \times \log r.$		Latitude.	
	sin	cos	sin	cos	sin	cos
+0 0	..	..	..	..	..	—0.013
1 — 1	—19.869	—27.871	+1 597	—1 139	—0.023	+0.025
2 — 2	—10.035	+28.793	—1 840	— 642	+0.001	+0.011
3 — 3	—14.280	+ 4.327	— 571	—1 895	—0.002	+0.021
4 — 4	+ 2.672	+ 2.063	— 315	+ 403	+0.011	0.000
5 — 5	+ 0.081	— 0.845	+ 149	+ 14	—0.002	—0.009
6 — 6	— 0.306	+ 0.182	— 33	— 57	—0.002	+0.001
7 — 7	+ 0.148	+ 0.066	— 12	+ 29	..	..
8 — 8	— 0.017	— 0.076	+ 15	— 3	..	..
9 — 9	— 0.027	+ 0.030	— 6	— 5	..	..
10 — 10	+ 0.021	+ 0.002	0	+ 4	..	..
+11 — 11	— 0.006	— 0.011	..	..	..	..
— 9 + 10	+ 0.007	+ 0.007	..	..	..	..
— 8 9	+ 0.003	— 0.012	..	..	..	..
— 7 8	— 0.021	+ 0.009	+ 2	+ 4	..	..
— 6 7	+ 0.037	+ 0.023	+ 4	— 7	—0.002	—0.002
— 5 6	— 0.010	— 0.091	— 15	+ 1	—0.001	+ 0.005
— 4 5	— 0.210	+ 0.172	+ 26	+ 32	+ 0.009	—0.005
— 3 4	+ 0.968	+ 0.280	+ 39	— 134	—0.019	—0.010
— 2 3	+ 0.496	+ 1.473	+ 157	— 52	+ 0.007	+ 0.056
— 1 2	+ 1.276	— 1.764	— 208	— 148	+ 0.134	—0.119
0 + 1	+ 0.844	— 0.093	— 5	— 30	+0.071	+0.016
+1 0	— 2.467	— 2.776	— 196	+ 166	—0.120	—0.302
2 — 1	+ 0.123	— 0.595	+ 279	+ 78	—0.158	+ 0.240
3 — 2	—17.408	+ 8.633	— 489	— 973	+ 0.281	—0.006
4 — 3	+ 4.454	+ 2.367	— 145	+ 275	—0.022	—0.031
5 — 4	+ 0.419	+ 2.946	— 391	+ 53	+0.034	—0.091
6 — 5	+ 0.555	— 0.523	+ 79	+ 84	—0.025	+0.007
7 — 6	— 0.234	— 0.052	+ 9	— 41	+0.010	+0.007
8 — 7	+ 0.044	+ 0.102	— 20	+ 8	0.000	—0.006
9 — 8	+ 0.028	— 0.047	+ 7	+ 6	—0.002	+0.001
10 — 9	— 0.030	+ 0.002	0	— 5	..	..
+11 — 10	+ 0.007	+ 0.012	— 3	+ 1	..	..

TABLE A.—*Periodic perturbations of the longitude, log radius vector, and latitude of Uranus by Neptune, omitting terms represented by variations of the elements dependent on the argument $2g'' - g'$ —Continued.*

$g'' \quad g'$	Longitude.		$10^8 M \times \log r.$		Latitude.	
	sin	cos	sin	cos	sin	cos
	"				"	
- 6 + 8	+ 0.003	+ 0.002	.	.	.	.
- 5 7	0.000	- 0.007	.	.	.	.
- 4 6	- 0.014	+ 0.011	+ 2	+ 2	.	.
- 3 5	+ 0.061	+ 0.018	+ 2	- 9	- 0.002	- 0.001
- 2 4	+ 0.030	+ 0.086	+ 10	- 4	0.000	+ 0.002
- 1 3	+ 0.076	- 0.107	- 14	- 10	+ 0.004	- 0.004
0 2	+ 0.052	- 0.005	0	- 4	+ 0.014	+ 0.002
+ 1 + 1	- 0.161	- 0.181	- 20	+ 19	- 0.023	- 0.043
2 0	+ 0.003	- 0.054	+ 1	+ 2	+ 0.003	- 0.009
3 - 1	- 0.538	+ 0.232	+ 23	+ 52	- 0.091	+ 0.017
4 - 2	- 0.128	- 0.016	+ 17	- 39	+ 0.039	+ 0.035
5 - 3	+ 0.841	+ 2.815	- 147	+ 48	+ 0.005	- 0.049
6 - 4	+ 0.477	- 0.622	+ 38	+ 27	- 0.009	+ 0.004
7 - 5	+ 0.518	+ 0.014	- 1	+ 67	- 0.026	- 0.009
8 - 6	- 0.079	- 0.119	+ 18	- 10	+ 0.002	+ 0.008
9 - 7	- 0.021	+ 0.047	- 8	- 4	+ 0.002	- 0.001
10 - 8	+ 0.019	0.000	0	+ 3	.	.
+ 11 - 9	- 0.006	- 0.011	.	.	.	.
- 3 + 6	+ 0.004	+ 0.001	.	.	.	.
- 2 5	+ 0.002	+ 0.005	.	.	.	.
- 1 4	+ 0.005	- 0.007	.	.	.	.
0 3	+ 0.002	0.000	.	.	.	.
+ 1 2	- 0.010	- 0.010	.	.	.	.
2 + 1	0.000	- 0.005	.	.	+ 0.001	- 0.002
3 0	- 0.031	+ 0.014	+ 1	+ 4	- 0.010	+ 0.002
4 - 1	0.000	+ 0.002	0	0	.	.
5 - 2	+ 0.007	+ 0.070	+ 8	0	0.000	+ 0.013
6 - 3	- 0.005	+ 0.017	- 5	- 3	+ 0.007	- 0.006
7 - 4	+ 0.451	- 0.061	+ 1	+ 22	- 0.009	- 0.003
8 - 5	- 0.087	- 0.092	+ 7	- 5	.	.
9 - 6	- 0.001	- 0.070	+ 8	+ 1	- 0.003	+ 0.004
+ 10 - 7	- 0.003	+ 0.016	.	.	.	.
+ 5 - 1	0.000	+ 0.004	.	.	.	.
6 - 2	- 0.001	+ 0.001	.	.	.	.
7 - 3	+ 0.010	- 0.001	.	.	.	.
+ 8 - 4	- 0.001	- 0.003	.	.	.	.

TABLE B.—*Perturbations of Uranus by Saturn of the first order as to the masses.*

$g' \quad g$	$n\delta z$		r		Longitude.		$10^8 M \times \log r$	
	sin	cos	sin	cos	sin	cos	sin	cos
0 0	. .	. .	. .	+93.68	. .	. .	. .	+19 724
	. .	. .	. .	+ 0.07T'	. .	- 0.524T'	. .	- 22T'
+1	. .	. .	+ 2.07	+ 0.45	- 0.002	+ 0.005	+ 435	+ 96
	- 9.244T'	-11.225T'	- 5.61T'	+ 4.64T'	- 9.229T'	-11.263T'	-1 189T'	+ 972T'
+2	- 0.039	+ 0.109	+ 0.16	- 0.02	- 0.039	+ 0.109	+ 34	- 4
	- 0.105T'	- 0.134T'	- 0.15T'	+ 0.07T'	- 0.538T'	- 0.658T'	- 82T'	+ 67T'
+3	- 0.001	+ 0.006	+ 0.01	- 0.01	- 0.003	+ 0.011	+ 1	- 1
	- 0.007T'	- 0.007T'	. .	. .	- 0.037T'	- 0.045T'	. .	. .
-2 -1	. .	. .	. .	. .	- 0.001	+ 0.002	. .	. .
-1	- 0.001	- 0.013	+ 0.01	- 0.01	- 0.030	+ 0.043	- 3	- 6
0	+ 0.231	+ 2.269	- 0.33	- 0.28	- 0.441	+ 1.402	+ 20	- 138
+1	- 5.884	-19.635	-36.02	+ 5.94	- 12.624	-18.600	-7 672	+ 534
2	-138.234	+15.619	- 9.00	-60.93	-143.042	+18.070	-2 347	-13 276
3	-96.624	+71.756	+ 7.09	+ 8.68	-103.131	+72.428	+1 563	+ 2 511
4	- 0.134	- 0.132	- 0.04	+ 0.08	- 5.048	+ 3.274	+ 349	+ 542
5	. .	. .	. .	. .	- 0.295	+ 0.194	+ 24	+ 37
+6	. .	. .	. .	. .	- 0.017	+ 0.012	+ 2	+ 2
-1 -2	. .	. .	. .	. .	- 0.002	+ 0.001	. .	. .
0	+ 0.010	+ 0.056	0.00	0.00	- 0.009	+ 0.022	+ 3	- 3
+1	- 0.189	- 0.812	- 0.81	+ 0.08	- 0.366	- 0.728	- 178	- 2
2	- 3.703	+ 1.594	- 1.73	- 3.83	- 3.762	+ 1.662	- 379	- 811
3	- 1.091	+ 2.155	- 2.02	- 1.19	- 1.258	+ 2.313	- 426	- 232
4	+ 0.294	+ 1.937	- 1.45	+ 0.14	+ 0.129	+ 1.934	- 283	+ 25
5	- 2.195	- 2.298	+ 0.82	- 0.84	- 2.208	- 2.203	+ 183	- 179
6	- 0.484	- 0.052	0.00	+ 0.08	- 0.586	- 0.155	- 10	+ 28
+7	. .	. .	. .	. .	- 0.029	- 0.008	- 1	+ 3
0 -3	. .	. .	. .	. .	0.000	- 0.002	. .	. .
+1	- 0.007	- 0.034	- 0.03	+ 0.01	- 0.010	- 0.035	- 7	+ 1
2	- 0.032	+ 0.027	- 0.02	- 0.05	- 0.055	- 0.006	- 1	- 12
3	- 0.475	- 0.657	+ 0.73	- 0.54	- 0.496	- 0.661	+ 154	- 115
4	- 0.395	- 0.105	+ 0.16	- 0.44	- 0.424	- 0.133	+ 30	- 92
5	- 0.142	+ 0.060	- 0.05	- 0.16	- 0.163	+ 0.056	- 9	- 33
6	- 0.030	+ 0.055	- 0.05	- 0.04	- 0.038	+ 0.058	- 10	- 7
+7	. .	. .	. .	. .	- 0.001	+ 0.003	. .	. .
+1 -4	0.000	- 0.002	. .	. .	0.000	- 0.002	. .	. .
2	- 0.001	+ 0.001	. .	. .	- 0.002	0.000	. .	. .
3	- 0.019	- 0.012	+ 0.02	- 0.02	- 0.012	- 0.020	+ 5	- 3
4	+ 0.149	- 0.168	+ 0.19	+ 0.17	+ 0.148	- 0.175	+ 41	+ 35
5	+ 0.007	- 0.119	+ 0.14	+ 0.02	+ 0.013	- 0.129	+ 29	+ 3
6	- 0.022	- 0.033	+ 0.04	- 0.02	- 0.022	- 0.039	+ 9	- 5
+7	. .	. .	. .	. .	- 0.001	- 0.002	. .	. .

TABLE B.—*Perturbations of Uranus by Saturn of the first order as to the masses—Continued.*

$g' \quad g$	$n\delta z$		r		Longitude.		$10^8 M \times \log r$	
	sin	cos	sin	cos	sin	cos	sin	cos
+3 -5	. .	. .	"	"	"	"	. .	. .
4	+ 0.004	- 0.011	+ 0.01	+ 0.01	+ 0.007	- 0.009	+ 3	+ 2
5	+ 0.063	+ 0.035	- 0.04	+ 0.07	+ 0.065	+ 0.034	- 8	+ 15
6	+ 0.042	- 0.007	0.00	+ 0.05	+ 0.045	- 0.005	0	+ 10
+7	+ 0.010	- 0.010	+ 0.01	+ 0.01	+ 0.012	- 0.010	+ 3	+ 3
+5 -6	. .	. .	. .	. .	0.000	+ 0.001	. .	. .
6	- 0.007	+ 0.024	- 0.03	- 0.01	- 0.007	+ 0.025	- 6	- 2
7	+ 0.006	+ 0.016	- 0.02	+ 0.01	+ 0.006	+ 0.017	- 4	+ 1
+8	. .	. .	. .	. .	0.000	+ 0.001	. .	. .

TABLE C.—*Perturbations of Uranus by Jupiter of the first order as to the masses.*

$g' \quad g_0$	$n\delta z$		r		Longitude.		$10^8 M \times \log r$	
	sin	cos	sin	cos	sin	cos	sin	cos
0 0	"	"	"	"	"	"	. .	- 3T'
+1	. .	. .	+ 0.895	+ 2.638	- 0.005	+ 0.001	+ 188	+ 555
	- 1.233T'	- 11.723T'	- 5.862T'	+ 0.616T'	- 1.230T'	- 11.762T'	- 1.238T'	+ 129T'
+2	- 0.100	+ 0.023	+ 0.087	+ 0.221	- 0.100	+ 0.023	+ 18	+ 47
	- 0.015T'	- 0.138T'	- 0.138T'	+ 0.015T'	- 0.073T'	- 0.687T'	- 87T'	+ 9T'
+3	- 0.004	+ 0.001	+ 0.007	+ 0.014	- 0.009	+ 0.002	+ 2	+ 3
	0.000T'	- 0.003T'	- 0.005T'	+ 0.001T'	- 0.004T'	- 0.041T'	- 6T'	0T'
-1 -1	- 0.008	- 0.010	+ 0.009	- 0.013	- 0.039	+ 0.002	+ 2	- 3
0	- 3.520	+ 1.518	- 0.027	- 0.273	- 1.230	+ 0.515	+ 100	+ 183
+1	+48.743	- 21.376	- 21.500	- 49.034	+ 48.623	- 21.320	- 4.518	- 10.302
2	+ 0.963	- 0.323	- 1.216	- 2.517	+ 3.239	- 1.318	- 361	- 769
3	- 0.014	+ 0.057	- 0.144	- 0.203	+ 0.163	- 0.017	- 39	- 64
+4	- 0.021	+ 0.008	- 0.011	- 0.014	- 0.011	+ 0.006	- 3	- 4
-1 -2	+ 0.001	0.000	0.000	+ 0.001	0.000	+ 0.001	0	0
0	- 0.083	+ 0.037	0.000	0.000	- 0.028	+ 0.013	+ 3	+ 6
+1	+ 1.176	- 0.515	- 0.513	- 1.174	+ 1.179	- 0.520	- 107	- 246
2	+ 0.158	- 0.153	+ 0.165	+ 0.119	+ 0.215	- 0.179	+ 32	+ 19
3	+ 0.035	- 0.047	+ 0.070	+ 0.052	+ 0.045	- 0.055	+ 14	+ 10
4	+ 0.006	- 0.010	+ 0.018	+ 0.011	+ 0.008	- 0.012	+ 4	+ 2
+5	- 0.001	+ 0.001	+ 0.001	+ 0.001	- 0.001	+ 0.001	0	0
0 -3	- 0.003	+ 0.001	- 0.001	- 0.003	- 0.001	0.000	0	0
+1	+ 0.043	- 0.019	- 0.019	- 0.043	+ 0.043	- 0.019	- 4	- 9
2	+ 0.003	- 0.004	+ 0.003	- 0.003	+ 0.005	- 0.004	0	- 1
3	- 0.008	+ 0.024	- 0.030	- 0.010	- 0.008	+ 0.024	- 6	- 2
4	- 0.002	+ 0.009	- 0.014	- 0.003	- 0.002	+ 0.010	- 3	- 1
+5	0.000	+ 0.002	- 0.004	0.000	0.000	+ 0.002	- 1	0

TABLE D.—*Perturbations of the latitude of Uranus by Saturn and Jupiter.*

Action of Saturn.								Action of Jupiter.			
g'	g	sin	cos	g'	g	sin	cos	g'	g_0	sin	cos
0	0	"	"	4	-2	"	"	0	0	"	"
+1		+0.252	+0.222	5		-0.008	+0.007	+1		+0.059	+0.054
2		-0.052	+0.014	+6		0.000	+0.004	2		-0.018	-0.012
+3		-0.008	+0.004	0	-3	-0.005	-0.003	+3		-0.002	-0.001
-2	-1	+0.002	+0.006	+1		-0.001	0.000	-2	-1	-0.003	+0.006
-1		-0.016	0.000	2		-0.018	-0.003	-1		+0.022	-0.047
0		-0.694	-0.521	3		-0.006	+0.004	0		+0.281	-0.587
+1		+0.037	+0.076	4		0.000	+0.015	+1		+0.006	-0.012
2		-1.530	+2.542	5		+0.004	+0.008	2		+0.006	-0.004
3		+0.090	+0.086	+6		-0.003	-0.002	+3		-0.002	-0.001
4		-0.065	-0.038	+3	-4	-0.001	-0.006	-1	-2	-0.001	+0.002
+5		-0.005	-0.001	4		-0.002	-0.002	0		+0.052	-0.108
-1	-2	-0.002	-0.002	5		-0.004	0.000	+1		+0.002	-0.006
0		-0.026	-0.014	6		-0.002	+0.002	0	-3	+0.003	-0.006
+1		-0.025	+0.056	7		+0.001	-0.002				
2		+0.010	+0.026								
+3		+0.076	+0.024	+4	-5	+0.002	0.000				

TABLE E.—*Perturbations of Uranus by Saturn of the second order as to the masses.*

g'	g	g_0	$n\delta^2z$				Longitude.			
			sin		cos		sin		cos	
0	0	0	"	"	"	"	"	"	"	"
+1			0.000	-0.341T'	0.000	+0.054T'	0.000	-0.340T'	-0.001	+0.054T'
			"	+0.031T'^2	"	+0.046T'^2	"	+0.031T'^2	"	+0.044T'^2
+2			-0.004	-0.003T'	-0.012	0.000T'	-0.004	-0.019T'	-0.012	+0.003T'
0	-1	0	-0.016	0.000T'	+0.004	-0.002T'	-0.019	+0.005T'	+0.007	+0.001T'
+1			-0.025	+0.019T'	-0.003	0.000T'	-0.050	+0.085T'	+0.046	+0.046T'
2			-0.518	+1.310T'	+0.852	+0.980T'	-0.522	+1.394T'	+1.009	+0.985T'
3			-0.06	+1.77 T'	+3.35	+0.10 T'	-0.08	+1.83 T'	+3.39	+0.15 T'
4			-0.009	+0.003T'	-0.001	+0.004T'	-0.013	+0.090T'	+0.158	+0.011T'
+5			"	"	"	"	0.000	+0.005T'	+0.009	0.000T'
+1	-2	0	-0.002	+0.009T'	-0.002	+0.003T'	-0.002	+0.009T'	-0.002	+0.003T'
2			+0.004	0.000T'	-0.002	0.000T'	+0.004	+0.001T'	-0.002	-0.001T'
3			0.000	+0.008T'	+0.007	-0.016T'	-0.002	+0.008T'	+0.007	-0.017T'
4			-0.039	-0.004T'	+0.006	-0.028T'	-0.037	-0.001T'	+0.004	-0.026T'
5			+0.053	+0.050T'	-0.039	+0.050T'	+0.052	+0.050T'	-0.040	+0.049T'
+6			+0.010	0.000T'	-0.027	0.000T'	+0.012	+0.002T'	-0.029	+0.002T'
+4	-3	0	-0.001	+0.003T'	0.000	+0.001T'	-0.001	+0.003T'	0.000	+0.001T'
5	/		+0.002	+0.002T'	-0.004	-0.001T'	+0.002	+0.002T'	-0.004	-0.001T'
6			-0.001	0.000T'	-0.003	-0.001T'	-0.001	0.000T'	-0.003	-0.001T'
+7			-0.004	0.000T'	-0.004	0.000T'	-0.004	0.000T'	-0.004	0.000T'

TABLE E.—*Perturbations of Uranus by Saturn of the second order as to the masses—Continued.*

g'	g	g_0	$n\delta^2z$				Longitude.			
			sin		cos		sin		cos	
			"	"	"	"	"	"	"	"
-2	+2	-1	.	.	.	.	-0.005	.	0.000	.
-1			-0.103	.	-0.001	.	-0.104	.	-0.001	.
0			-0.018	.	-0.002	.	-0.024	.	-0.006	.
+1			-0.012	.	-0.091	.	-0.013	.	-0.091	.
+2			.	.	.	.	-0.001	.	-0.004	.
-3	+3	-1	.	.	.	.	+0.002	.	-0.008	.
-2			+0.018	.	-0.169	.	+0.042	.	-0.168	.
-1			+0.507	.	+0.030	.	+0.508	.	+0.022	.
0			.	.	.	.	+0.024	.	+0.001	.
-5	+4	-1	.	.	.	.	-0.008	.	-0.006	.
-4			-0.175	.	-0.131	.	-0.172	.	-0.133	.
-3			+0.064	.	-0.045	.	+0.054	.	-0.052	.
-2			-0.040	.	-0.018	.	-0.037	.	-0.020	.
-1			.	.	.	.	-0.002	.	-0.001	.
+1	+3	-2	+0.035	.	-0.009	.	+0.033	.	-0.011	.
2			-0.044	.	-0.043	.	-0.044	.	-0.043	.
3			-0.039	.	-0.003	.	-0.042	.	-0.004	.
4			-0.031	.	+0.019	.	-0.032	.	+0.017	.
+5			+0.018	.	-0.042	.	+0.017	.	-0.041	.
0	+4	-2	.	.	.	.	+0.004	.	-0.006	.
+1			+0.099	-0.001T'	-0.088	+0.001T'	+0.081	-0.001T'	-0.120	+0.001T'
2			-0.369	+0.002T'	-0.679	-0.002T'	-0.377	+0.002T'	-0.690	-0.002T'
3			-0.270	.	-0.144	.	-0.287	.	-0.176	.
+4			.	.	.	.	-0.014	.	-0.009	.
-2	+5	-2	.	.	.	.	+0.033	0.000T'	+0.013	-0.001T'
-1			+0.698	-0.001T'	+0.258	-0.015T'	+0.696	-0.001T'	+0.274	-0.015T'
0			-0.05	+0.01 T'	+0.34	0.00 T'	-0.02	+0.01 T'	+0.35	0.00 T'
+1			+0.021	-0.031T'	-0.050	-0.013T'	+0.021	-0.031T'	-0.033	-0.013T'
+2			0.000	-0.001T'	-0.001	0.000T'	+0.001	-0.002T'	-0.002	-0.001T'
-6	+6	-2	.	.	.	.	-0.005	.	0.000	.
-5			.	.	.	.	-0.080	+0.001T'	-0.003	+0.002T'
-4			+0.05	0.00 T'	+0.07	0.00 T'	-1.34	+0.02 T'	-0.04	+0.04 T'
-3			-29.4	+0.4 T'	-2.6	+0.8 T'	-29.6	+0.4 T'	-2.3	+0.8 T'
-2			-5.19	+0.22 T'	+5.69	+0.10 T'	-6.58	+0.24 T'	+5.57	+0.14 T'
-1			-0.215	+0.003T'	+0.092	+0.001T'	-0.539	+0.014T'	+0.352	+0.008T'
0			.	.	.	.	-0.029	.	+0.020	.
-6	+7	-2	.	.	.	.	-0.011	.	+0.010	.
-5			-0.231	.	+0.211	.	-0.230	.	+0.208	.
-4			+0.018	.	-0.063	.	+0.006	.	-0.055	.
-3			-0.011	.	-0.051	.	-0.011	.	-0.055	.
-2			+0.001	.	-0.053	.	0.000	.	-0.055	.

NOTE—T' represents the time from 1850 in units of one century.

TABLE E.—*Perturbations of Uranus by Saturn of the second order as to the masses—Continued.*

g'	g	g_0	δr				$10^8 M \times \delta \log r$			
			sin		cos		sin		cos	
0	0	0	"	"	"	"	.	.	.	oT'
+1			+0.034	+0.011T'	+0.008T'	-0.001T' ^{1/2}	+ 7	+ 2T'	- 1	+ 32T'
				+0.023T' ^{1/2}	-0.003	+0.152T'		+ 5T' ^{1/2}		- 3T' ^{1/2}
+2			+0.008	-0.002T'	-0.004	+0.003T'	+ 2	oT'	- 1	+ 3T'
0	-1	0	-0.005	+0.003T'	-0.014	+0.005T'	- 1	+ 1T'	- 3	+ 1T'
+1			+0.036	-0.006T'	-0.029	+0.014T'	+ 3	- 6T'	- 9	+ 9T'
2			-0.448	-0.432T'	-0.306	+0.584T'	-111	-91T'	- 64	+132T'
3			+0.156	-0.008T'	-0.017	-0.166T'	+ 37	+ 3T'	- 1	- 41T'
+4			-0.001	+0.002T'	+0.004	-0.002T'	+ 17	oT'	+ 1	- 9T'
+1	-2	0	+0.003	+0.003T'	-0.002	-0.009T'	+ 1	+ 1T'	0	- 2T'
2			+0.004	+0.001T'	+0.007	0.000T'	+ 1	oT'	+ 1	oT'
3			+0.010	+0.015T'	-0.004	+0.007T'	+ 2	+ 3T'	- 1	+ 1T'
4			+0.011	+0.020T'	-0.033	-0.003T'	+ 2	+ 4T'	- 7	- 1T'
5			+0.012	-0.018T'	+0.013	+0.019T'	+ 3	- 4T'	+ 3	+ 4T'
+6			-0.005	0.000T'	-0.002	0.000T'	- 1	oT'	0	oT'
-1	+2	-1	+0.001	.	-0.075	.	0	.	- 16	.
0			+0.002	.	-0.018	.	0	.	- 4	.
+1			+0.020	.	0.000	.	+ 4	.	0	.
-2	+3	-1	+0.066	.	+0.004	.	+ 14	.	+ 4	.
-1			-0.052	.	-0.175	.	- 12	.	- 37	.
0			0.000	.	0.000	.	0	.	- 3	.
-4	+4	-1	-0.027	.	+0.033	.	- 6	.	+ 7	.
-3			-0.028	.	-0.037	.	- 7	.	- 7	.
-2			-0.015	.	+0.034	.	- 3	.	+ 7	.
+1	+3	-2	-0.007	.	-0.034	.	- 1	.	- 7	.
2			+0.044	.	-0.048	.	+ 9	.	- 10	.
3			+0.005	.	-0.037	.	+ 1	.	- 8	.
4			-0.013	.	-0.023	.	- 3	.	- 5	.
+5			+0.014	.	+0.006	.	+ 3	.	+ 1	.
+1	+4	-2	-0.145	.	-0.235	.	- 28	.	- 51	.
2			+0.266	.	-0.163	.	+ 56	.	- 36	.
+3			-0.021	.	+0.042	.	- 7	.	+ 11	.
-2	+5	-2	.	.	.	.	- 1	oT'	+ 3	oT'
-1			-0.104	+0.006T'	+0.276	-0.001T'	- 24	+ 1T'	+ 58	oT'
0			+0.012	0.000T'	+0.006	0.000T'	+ 4	oT'	- 2	oT'
+1			-0.025	-0.007T'	-0.011	+0.016T'	- 3	- 1T'	- 2	+ 3T'
-5	+6	-2	.	.	.	.	+ 1	oT'	- 10	oT'
-4			-0.034	0.000T'	+0.023	0.000T'	+ 4	- 4T'	-142	+ 2T'
-3			+0.115	-0.027T'	-1.063	+0.011T'	- 4	- 6T'	-250	+ 3T'
-2			+2.720	+0.049T'	+2.474	-0.106T'	+560	+14T'	+665	- 24T'
-1			+0.017	+0.001T'	-0.182	-0.001T'	+ 31	oT'	- 2	- 1T'
0			.	.	.	.	+ 2	oT'	+ 4	oT'
-5	+7	-2	+0.087	.	+0.097	.	+ 18	.	+ 20	.
-4			-0.044	.	-0.010	.	- 8	.	- 1	.
-3			-0.049	.	+0.009	.	- 10	.	+ 2	.
-2			-0.055	.	-0.002	.	- 12	.	0	.

TABLE F.—*Perturbations of Uranus by Jupiter of the second order as to the masses.*

g'	g	g_0	$n\delta^2z$				Longitude.			
			sin		cos		sin		cos	
			"	"	"	"	"	"	"	"
+1	0	0	0.000	-0.004T'	0.000	+0.013T'	0.000	-0.004T'	0.000	+0.013T'
			.	-0.014T ^{1/2}	.	-0.007T ^{1/2}	.	-0.014T ^{1/2}	.	-0.007T ^{1/2}
+2			0.000	-0.002T'	0.000	0.000	0.000	-0.002T'	0.000	+0.001T'
0	-1	0	.	.	.	.	+0.001	.	-0.003	.
+1			+0.032	.	-0.052	.	+0.029	.	-0.055	.
2			-0.073	.	-0.052	.	-0.071	.	-0.063	.
3			+0.01	.	-0.19	.	+0.01	.	-0.19	.
+4			.	.	.	.	0.000	.	-0.009	.
0	-2	0	-0.001	.	+0.001	.	0.000	.	+0.001	.
+1			+0.019	.	-0.007	.	+0.019	.	-0.007	.
2			+0.005	.	-0.002	.	+0.006	.	-0.002	.
+3			+0.003	.	-0.002	.	+0.003	.	-0.002	.
+1	-3	0	0.000	.	+0.001	.	0.000	.	+0.001	.
+1	-5	0	0.000	.	-0.007	.	0.000	.	-0.007	.
+2			0.000	.	-0.001	.	0.000	.	-0.001	.
+1	-2	-1	+0.001	.	0.000	.	+0.001	.	0.000	.
+1	-1	-1	-0.001	.	-0.001	.	-0.001	.	-0.001	.
2			-0.003	.	-0.003	.	-0.004	.	-0.002	.
3			-0.028	.	+0.016	.	-0.029	.	+0.017	.
4			-0.017	.	+0.029	.	-0.018	.	+0.030	.
+5			-0.001	.	+0.002	.	-0.002	.	+0.003	.
-2	+1	-1	+0.030	.	+0.007	.	+0.032	.	+0.006	.
-1			+0.041	.	-0.012	.	+0.042	.	-0.012	.
0			+0.001	.	-0.008	.	+0.003	.	-0.009	.
+1			+0.001	.	-0.002	.	+0.001	.	-0.002	.
-2	+2	-1	+0.001	.	0.000	.	+0.005	.	0.000	.
-1			+0.077	.	-0.001	.	+0.077	.	-0.001	.
0			-0.009	.	0.000	.	-0.005	.	0.000	.
-3	+3	-1	.	.	.	.	-0.002	.	+0.001	.
-2			-0.017	.	+0.008	.	-0.043	.	+0.017	.
-1			-0.545	.	+0.194	.	-0.546	.	+0.194	.
0			.	.	.	.	-0.026	.	+0.009	.
+1			.	.	.	.	-0.002	.	+0.001	.
-1	+4	-1	+0.002	.	-0.003	.	+0.002	.	-0.003	.
-3	+5	-1	.	.	.	.	0.000	.	-0.001	.
-2			0.000	.	-0.003	.	0.000	.	-0.010	.
-1			+0.004	.	-0.150	.	+0.004	.	-0.150	.
0			0.000	.	+0.011	.	0.000	.	+0.004	.
+1	0	-2	0.000	+0.006T'	0.000	+0.003T'	0.000	+0.006T'	0.000	+0.003T'
+1	+1	-2	-0.003	.	-0.006	.	-0.003	.	-0.006	.

TABLE F.—*Perturbations of Uranus by Jupiter of the second order as to the masses—Continued.*

g'	g	g_0	$n\delta^2 z$				Longitude.			
			sin		cos		sin		cos	
			"	"	"	"	"	"	"	"
0	+1	-2	+0.001	.	.	.	.	.	.	.
+1	+2	-2	-0.013	.	.	+0.005	.	-0.013	+0.005	.
+2			.	.	.	.	-0.001	.	0.000	.
+1	+3	-2	-0.002	.	.	+0.002	.	-0.002	+0.002	.
+2			0.000	.	.	-0.001	.	0.000	-0.001	.
-3	+5	-2	.	.	.	.	-0.001	.	-0.001	.
-2			-0.002	.	.	-0.002	.	-0.016	-0.012	.
-1			-0.29	.	.	-0.21	.	-0.29	-0.21	.
0			-0.01	.	.	0.00	.	-0.02	-0.01	.
+1			.	.	.	.	-0.001	.	-0.001	.
0	+2	-3	+0.001	.	.	-0.001	.	+0.001	-0.001	.
+1			-0.008	.	.	+0.008	.	-0.008	+0.008	.
+1	+3	-3	+0.002	.	.	-0.006	.	+0.002	-0.006	.
+1	+4	-3	0.000	.	.	-0.002	.	0.000	-0.002	.
0	+5	-3	+0.008	.	.	+0.008	.	+0.003	+0.003	.
+1			-0.117	.	.	-0.110	.	-0.117	-0.110	.
2			-0.002	.	.	-0.002	.	-0.007	-0.007	.
+3			+0.001	.	.	0.000	.	+0.001	0.000	.
+1	+2	-4	0.000	.	.	+0.001	.	0.000	+0.001	.
0	+5	-4	-0.001	.	.	0.000	.	-0.001	0.000	.
+1			+0.004	.	.	-0.010	.	+0.004	-0.010	.
+2			-0.001	.	.	-0.001	.	-0.001	-0.001	.
+1	+5	-5	+0.001	.	.	0.000	.	+0.001	0.000	.

g'	g	g_0	δv				$10^8 M \times \delta \log r$			
			sin		cos		sin		cos	
			"	"	"	"	"	"	"	"
+1	0	0	0.000	-0.004T'	-0.001	+0.015T'	.	-1T'	.	+3T'
			.	-0.004T' ²	.	+0.007T' ²	.	-1T' ²	.	+1T' ²
+2	-1	0	-0.047	+0.002T'	-0.214	-0.001T'	-9	0T'	-45	0T'
3			+0.487	+0.014T'	+0.749	0.000T'	+103	+3T'	+158	0T'
+4			+0.006	+0.001T'	+0.008	-0.001T'	0	0T'	+2	0T'
+1	-2	0	-0.007	.	-0.019	.	-1	.	-4	.
2			+0.001	.	+0.003	.	0	.	+1	.
+3			+0.001	.	+0.003	.	0	.	+1	.
+2	-1	-1	-0.004	.	+0.003	.	-1	.	+1	.
3			+0.020	.	+0.034	.	+4	.	+7	.
+4			+0.037	.	+0.023	.	+8	.	+5	.

TABLE F.—*Perturbations of Uranus by Jupiter of the second order as to the masses*—Continued.

g'	g	g_0	δv				$10^8 M \times \delta \log r$			
			sin		cos		sin		cos	
			"	"	"	"				
-2	+1	-1	+0.008	.	-0.037	.	+ 2	.	- 8	.
-1			-0.014	.	-0.054	.	- 3	.	- 11	.
0			-0.011	.	-0.005	.	- 2	.	- 1	.
-1	+2	-1	+0.001	.	+0.047	.	0	.	+ 10	.
-2	+3	-1	-0.006	.	-0.008	.	- 2	.	- 5	.
-1			+0.076	.	+0.194	.	+ 16	.	+ 41	.
0			.	.	.	.	+ 1	.	+ 3	.
-2	+5	-1	+0.008	.	0.000	.	+ 3	.	0	.
-1			+0.153	.	+0.004	.	+ 32	.	+ 1	.
+1	+2	-2	+0.005	.	+0.013	.	+ 1	.	+ 3	.
-2	+5	-2	.	.	.	.	+ 1	.	1	.
1			+0.093	.	-0.122	.	+ 20	.	- 26	.
0			.	.	.	.	- 1	.	- 1	.
+1	-2	-3	+0.008	.	+0.008	.	+ 2	.	- 2	.
0	+5	-3	.	.	.	.	+ 1	.	- 1	.
+1			-0.110	.	+0.117	.	- 23	.	+ 25	.
+2			-0.005	.	+0.006	.	- 2	.	- 2	.

II.—TRANSFORMATION OF THE PRECEDING INEQUALITIES FOR TABULATING.

In forming an ephemeris of so slowly moving a planet as Uranus, it will suffice to derive the heliocentric places at epochs distant by 180, or, at least, 120 days. The positions to be derived are therefore so few in number that it is not worth while to form tables of double entry. In order to reduce the tables of single entry to the smallest number, and, at the same time, to include all the terms of perturbations we desire, the latter are expressed in the form—

$$(v. c. 0) + (v. s. 1) \sin g + (v. c. 1) \cos g + (v. s. 2) \sin 2g +, \text{etc.}, \quad (1)$$

and the coefficients ($v. c. i$) and ($v. s. i$) are the quantities tabulated. In the case of periodic terms depending on only two arguments, there will be, for these coefficients, only one varying argument for each disturbing planet. But in those terms of the second order depending on three arguments, the values of ($v. c. i$), etc., will depend on two arguments.

We may, if we choose, express and tabulate all the periodic perturbations in the preceding form. But, for reasons easily seen, and which I have set forth repeatedly elsewhere, it is better, in the present state of the theories, to treat those inequalities arising from changes of long period in the elements somewhat as we do the secular variations. When we do this, we have a choice between two methods of treating the

inequalities of the mean longitude. The expression for the orbit longitude in terms of the elements is of the form—

$$v = l + e_1 \sin (l - \pi) + e_2 \sin (2l - 2\pi) + \dots \quad (2)$$

where e_1, e_2 , etc., are functions of the eccentricity. If we derive δv from this equation in terms of $\delta l, \delta e$, and $\delta \pi$, we see that it may be expressed in the form (1) by putting

$$\begin{aligned} (v. c. 0) &= \delta l \\ (v. s. 1) &= \delta e_1 \\ (v. c. 1) &= e_1 (\delta l - \delta \pi) \end{aligned} \quad (3)$$

where $g = l - \pi$.

But we may proceed in a slightly different way. We may enter the table for the equation of the center—

$$E = e_1 \sin g + e_2 \sin 2g + \dots$$

with the argument $g + \delta l$. We shall then have only the inequalities depending on e and π to tabulate, and shall therefore have—

$$\begin{aligned} (v. c. 0) &= \delta l \\ (v. c. 1) &= -e_1 \delta \pi \\ (v. c. 2) &= -2e_2 \delta \pi \end{aligned} \quad (4)$$

while the $(v. s. i)$'s will remain as in (3). When δl becomes very large this second method is preferable, otherwise the first may be preferred.

We shall next show how the coefficients of (3) may be found directly from the expressions for the Hansenian variable $n\delta z$. The expression for the longitude in terms of this variable is—

$$v = l + n\delta z + e_1 \sin (g + n\delta z) + e_2 \sin 2(g + n\delta z) + \dots \quad (5)$$

in which l is the undisturbed mean longitude, and e_1, e_2 , etc., are functions of the eccentricity. The terms of $n\delta z$ may be divided into groups arranged according to the arguments, the arguments in each group differing only by multiples of g . Let the terms of any one group be—

$$\begin{aligned} n\delta z = & \dots \\ & + s_{-2} \sin (A - 2g) + c_{-2} \cos (A - 2g) \\ & + s_{-1} \sin (A - g) + c_{-1} \cos (A - g) \\ & + s_0 \sin A + c_0 \cos A \\ & + s_1 \sin (A + g) + c_1 \cos (A + g) \\ & + s_2 \sin (A + 2g) + c_2 \cos (A + 2g) \\ & + \dots \end{aligned} \quad (6)$$

It is indifferent in theory which argument we take for A; we prefer that of long period, if there is such; otherwise that with the largest coefficients.

We derive from (5)

$$\delta v = (1 + e_1 \cos g + 2e_2 \cos 2g + \dots) n\delta z \quad (7)$$

Substituting the preceding value of $n\delta z$ and reducing the resulting expression for δv to the form (1), we shall have—

$$\begin{aligned} (v. c. 0) &= \left\{ s_0 + \frac{1}{2} e_1(s_1 + s_{-1}) + e_2(s_2 + s_{-2}) + \dots \right\} \sin A \\ &\quad + \left\{ c_0 + \frac{1}{2} e_1(c_1 + c_{-1}) + e_2(c_2 + c_{-2}) + \dots \right\} \cos A \\ (r. s. 1) &= \left\{ -(c_1 - c_{-1}) - \frac{1}{2} e_1(c_2 - c_{-2}) + e_2(c_1 - c_{-1} - c_3 + c_{-3}) + \dots \right\} \sin A \\ &\quad + \left\{ s_1 - s_{-1} + \frac{1}{2} e_1(s_2 - s_{-2}) - e_2(s_1 - s_{-1} - s_3 + s_{-3}) + \dots \right\} \cos A \\ (r. c. 1) &= \left\{ s_1 + s_{-1} + \frac{1}{2} e_1(2s_0 + s_2 + s_{-2}) + e_2(s_1 + s_{-1} + s_3 + s_{-3}) + \dots \right\} \sin A \\ &\quad + \left\{ c_1 + c_{-1} + \frac{1}{2} e_1(2c_0 + c_2 + c_{-2}) + e_2(c_1 + c_{-1} + c_3 + c_{-3}) + \dots \right\} \cos A \\ (r. s. 2) &= \left\{ -(c_2 - c_{-2}) - \frac{1}{2} e_1(c_1 - c_{-1} + c_3 - c_{-3}) + \dots \right\} \sin A \\ &\quad + \left\{ s_2 - s_{-2} + \frac{1}{2} e_1(s_1 - s_{-1} + s_3 - s_{-3}) + \dots \right\} \cos A \\ (v. c. 2) &= \left\{ s_2 + s_{-2} + \frac{1}{2} e_1(s_1 + s_{-1} + s_3 + s_{-3}) + 2e_2 s_0 + \dots \right\} \sin A \\ &\quad + \left\{ c_2 + c_{-2} + \frac{1}{2} e_1(c_1 + c_{-1} + c_3 + c_{-3}) + 2e_2 c_0 + \dots \right\} \cos A \end{aligned}$$

It will be remarked that in all these transformations quantities of two dimensions in the coefficients of perturbations are neglected¹. The largest of these coefficients is $138'' = 0.00067$, of which the square is $0''.08$. In rigorously transforming $n\delta z$ into δv the square of $n\delta z$ will be multiplied by the eccentricity, so that its effect will, at greatest, only be of the order of magnitude $\pm 0''.004$.

The problem now is to transform the preceding perturbations into the form (1). For this purpose we divide the perturbations into two classes—the secular and the periodic. With the secular terms we include the terms depending on the following three arguments of long period—

$$\begin{aligned} 2g'' - g' \\ 5g - 2g_0 \\ -3g' + 6g - 2g_0 \end{aligned}$$

The perturbations depending on which we treat as perturbations of the elements.

At first the secular variations of the elements were all computed in the usual way, the secular effects of the second order due to the periodic perturbations being neglected. In using secular variations of the elements a disadvantage is met with in using the longitude of the perihelion as an element, because, when the eccentricity is small, the variation of the perihelion may increase indefinitely. Hence, instead of e and π we use rectangular coordinates, $e \sin \pi$ and $e \cos \pi$. Moreover, for simplification we reckon the longitude π from the perihelion of some fixed epoch, in the present case 1900. Thus, instead of e and π , we use the quantities h and k —

$$h = e \sin (\pi - \pi_0)$$

$$k = e \cos (\pi - \pi_0)$$

π_0 being the longitude of the perihelion at 1900.

By making the computation for three epochs, as I have done with the four inner planets, we may derive the secular variations to terms of the second and third powers of the time. In doing this I have retained only the second power. The results are—

Action of—	δh		δk	
	"	"	"	"
Jupiter	+ 5.872T	+0.014T ²	−0.616T	−0.011T ²
Saturn	+ 5.632T	−0.001T ²	−4.601T	+0.009T ²
Neptune	+ 2.095T	+0.007T ²	−0.210T	−0.003T ²
Sum	+13.599T	+0.020T ²	−5.427T	−0.005T ²

I have not used these values in the case of the action of Jupiter and Saturn, because, in the computation of the perturbations by the Hansenian method, the secular terms both of the first and second order are included. From Tables B, C, E, and F preceding we take the following results:

Action of—	$(v. s. 1)_0$		$(v. c. 1)_0$	
	"	"	"	"
Jupiter, first order	− 1.230T'		−11.762T'	
Saturn, first order	− 9.229T'		−11.263T'	
Jupiter, second order	− 0.004T'	−0.014T' ²	+ 0.013T'	−0.007T' ²
Saturn, second order	− 0.340T'	+0.031T' ²	+ 0.054T'	+0.044T' ²
Sum	−10.803T'	+0.017T' ²	−22.958T'	+0.037T' ²

These values presuppose that the mean anomaly is reckoned from the perihelion of 1850, which is indicated by applying the suffix 0 to $(v. s. 1)$, etc. But, as we are to use the elements of 1900 in the tables, we must reduce the coefficients $(v. s. 1)_0$ and $(v. c. 1)_0$ to those corresponding to the mean anomaly from the perihelion of 1900. If we call g'_0 the mean anomaly of 1850 we shall have

$$g' = g'_0 - 5'.56 = g'_0 - 0.00162$$

and the perturbation

$$\delta v = (-10''.803 T' + 0''.017 T'^2) \sin g'_0 - (22''.958 T' - 0''.037 T'^2) \cos g'_0$$

becomes

$$\delta v = (-10''.766 T' + 0''.017 T'^2) \sin g' - (22''.975 T' - 0''.037 T'^2) \cos g'.$$

We have to make a yet farther change by using T from 1900 instead of T' from 1850. We thus obtain the following secular coefficients, with which we include, for completeness, those obtained in the same way for the perturbations of the common logarithm of the radius vector. In the action of Neptune the numbers here given are to be subsequently multiplied by 1.02 to reduce them to the new value of the mass.

	Action of Jupiter and Saturn.		Action of Neptune.		Sum.	
	"	"	"	"	"	"
(v , s , 1)	-10.749T	+0.017T ²	-0.420T	-0.006T ²	-11.169T	+0.011T ²
(v , c , 1)	-22.938T	+0.037T ²	-4.190T	-0.014T ²	-27.128T	+0.023T ²
(v , s , 2)	-0.628T	+0.001T ²	-0.025T		-0.653T	+0.001T ²
(v , c , 2)	-1.343T	+0.002T ²	-0.247T	-0.001T ²	-1.590T	+0.001T ²
(v , s , 3)	-0.041T		-0.001T		-0.042T	
(v , c , 3)	-0.086T		-0.014T		-0.100T	
(v , s , 4)	-0.003T		0.000T		-0.003T	
(v , c , 4)	-0.005T		-0.001T		-0.006T	
10^8 (ρ , c , 0)	-25T		-1T		-26T	
10^8 (ρ , s , 1)	-2424T	+4T ²	-441T	-1T ²	-2865T	+3T ²
10^8 (ρ , c , 1)	+1130T	-2T ²	+44T	+1T ²	+1174T	-1T ²
10^8 (ρ , s , 2)	-169T		-31T		-200T	
10^8 (ρ , c , 2)	+78T		+3T		+81T	
10^8 (ρ , s , 3)	-6T		-2T		-8T	
10^8 (ρ , c , 3)	0T		0T		0T	

(A)

We have next the variations due to the action of Neptune and depending on the argument of long period $2g'' - g'$. These have been developed by mechanical quadratures in a way which will be described in the introduction to the tables of Neptune. The formulæ for the differential variations of the elements give the following numerical values of these variations when computed with the approximate elements and mean longitudes of each epoch:

Date.	$\frac{dh}{dT}$	$\frac{dk}{dT}$	$\frac{d\epsilon}{dT}$	$10^8 \times \frac{da}{dT}$
	"	"	"	
1750	+6.155	+61.277	-0.4540	-2844.3
1800	+10.740	+61.390	-1.6089	-2880.4
1850	+15.416	+61.167	-2.7920	-2902.8
1900	+20.168	+60.587	-4.0006	-2910.4
1950	+24.964	+59.628	-5.2305	-2901.8

These numbers depend on mass of Neptune $= 1 \div 19\,700$.

These special values are next to be represented by a development in powers of T from 1900, and integrated. In the case of the mean longitude and mean motion we have—

$$\frac{dn}{dT} = -\frac{3}{2} n \frac{da}{dT}$$

From the development of this derivative we derive by integration an expression for δn . Then we have for the perturbation of mean longitude—

$$\frac{d\delta l}{dT} = \delta n + \frac{d\varepsilon}{dT}$$

the integration of which gives δl . The following values of the perturbations of long period from 1900 are thus derived:

	"	"	"	"	
$\delta h =$	$+ 20.166\, T$	$+ 4.778\, T^2$	$+ 0.033\, T^3$	$- 0.008\, T^4$	
$\delta k =$	$+ 60.587$	$- 0.766$	$- 0.253$	$- 0.007$	\cdot
$\delta \varepsilon =$	$- 4.000$	$- 1.220$	$- 0.014$	$+ 0.001$	
$\delta l =$	$+ 32.451$	$- 0.017$	$- 0.061$	$- 0''.002\, T^5$	
$10^8 \frac{\delta \alpha}{a} =$	$- 2\,910.4$	$+ 0.3$	$+ 10.7$	$+ 0.4$	
$10^8 \delta \log a =$	$- 1\,264.0$	$+ 0.13$	$+ 4.65$	$+ 0.17$	

When we enter the table of the equation of the center with a value of the mean anomaly affected by the perturbation δl , the expressions for the coefficients (*v. c. o*), etc., in terms of δh and δk are these:

$$(v. s. 1) = \left(2 - \frac{3}{4}e^2\right) \delta k$$

$$(v. c. 1) = -\left(2 - \frac{1}{4}e^2\right) \delta h$$

$$(v. s. 2) = \left(\frac{5}{2}e - \frac{11}{6}e^3\right) \delta k$$

$$(v. c. 2) = -\left(\frac{5}{2}e - \frac{11}{12}e^3\right) \delta h$$

$$(v. s. 3) = \frac{13}{4}e^2 \delta k$$

$$(v. c. 3) = -\frac{13}{4}e^2 \delta h$$

$$(v. s. 4) = \frac{103}{24}e^3 \delta k$$

$$(v. c. 4) = -\frac{103}{24}e^3 \delta h$$

$$(\rho. c. 0) = M \left(\delta\alpha + \frac{1}{2} e \delta k \right)$$

$$(\rho. s. 1) = -M \left(1 - \frac{3}{8} e^2 \right) \delta h$$

$$(\rho. c. 1) = -M \left(1 - \frac{9}{8} e^2 \right) \delta k$$

$$(\rho. s. 2) = -\frac{3}{2} M e \delta h$$

$$(\rho. c. 2) = -\frac{3}{2} M e \delta k$$

$$(\rho. s. 3) = -\frac{17}{8} M e^2 \delta h$$

$$(\rho. c. 3) = -\frac{17}{8} M e^2 \delta k$$

Here M is the modulus of logarithms $= 0.434 \dots$

These expressions give the following values for the portions of the coefficients which arise from the action in question:

		"	"	"	"	
$(v. s. 1)$	$= +$	121.073	T	$-$	1.531	T ² $-$ 0.506 T ³ $-$ 0.014 T ⁴
$(v. c. 1)$	$= -$	40.321		$-$	9.553	$-$ 0.066 $+ 0.016$
$(v. s. 2)$	$= +$	7.116		$-$	0.090	$-$ 0.030
$(v. c. 2)$	$= -$	2.371		$-$	0.562	$-$ 0.004
$(v. s. 3)$	$= +$	0.436		$-$	0.005	$-$ 0.002
$(v. c. 3)$	$= -$	0.145		$-$	0.034	
$(v. s. 4)$	$= +$	0.026				
$(v. c. 4)$	$= -$	0.009		$-$	0.002	
$10^8 (\rho. c. 0)$	$= -$	964		$-$	4	$+ 3$
$10^8 (\rho. s. 1)$	$= -$	4 242		$-$	1 004	$- 7 + 2$
$10^8 (\rho. c. 1)$	$= -$	12 725		$+ 161$	$+ 53$	$+ 1$
$10^8 (\rho. s. 2)$	$= -$	300		$- 71$		
$10^8 (\rho. c. 2)$	$= -$	900		$+ 11$	$+ 4$	
$10^8 (\rho. s. 3)$	$= -$	20		$- 5$		
$10^8 (\rho. c. 3)$	$= -$	60		$+ 1$		

(B)

Lastly, for the small terms of long period of the second order, depending on the products of the masses of Jupiter and Saturn, we have the expressions—

$$A = 5g - 2g_0 = 67^{\circ}.91 + 40^{\circ}.75 T$$

$$A_1 = -3g' + 6g - 2g_0 = 20^{\circ}.45 - 22^{\circ}.61 T$$

$$\begin{aligned}
 (v. c. 0) &= \left(\begin{array}{l} -0.04 + 0.009 T \\ -29.44 - 0.410 T \end{array} \right) \sin A + \left(\begin{array}{l} 0.34 - 0.002 T \\ -1.93 - 0.805 T \end{array} \right) \cos A \\
 (v. s. 1) &= \left(\begin{array}{l} 0.10 - 0.007 T \\ 5.66 + 0.100 T \end{array} \right) \sin A - \left(\begin{array}{l} 0.40 + 0.031 T \\ 5.13 - 0.219 T \end{array} \right) \cos A \\
 (v. c. 1) &= \left(\begin{array}{l} 0.41 - 0.030 T \\ 7.79 - 0.259 T \end{array} \right) \sin A + \left(\begin{array}{l} 0.02 - 0.033 T \\ 5.62 + 0.175 T \end{array} \right) \cos A \\
 (v. s. 2) &= \left(\begin{array}{l} 0.004 + 0.000 T \\ 0.358 + 0.006 T \end{array} \right) \sin A - \left(\begin{array}{l} 0.018 + 0.002 T \\ 0.453 - 0.013 T \end{array} \right) \cos A \\
 (v. c. 2) &= \left(\begin{array}{l} 0.017 - 0.002 T \\ 0.611 - 0.015 T \end{array} \right) \sin A - \left(\begin{array}{l} 0.002 + 0.002 T \\ 0.354 + 0.006 T \end{array} \right) \cos A
 \end{aligned} \quad (C)$$

This (*v. c. 0*) is to be applied to the true longitude, but not to *g*.

The expressions (A), (B), and (C) include all the terms which we regard as non-periodic.

We next pass to the periodic terms, beginning with those which depend solely on the mean anomaly of Uranus. These give rise to constant terms in (*v. s. 1*) and (*v. c. 1*), the values of which, as found from Tables A to F, are shown below. These values are for the epoch 1900 in the case of Neptune, and for 1850 in the case of the other two planets, it being assumed that the minute residual constants to be determined will not vary appreciably during the half century. From each sum is subtracted the effect of small arbitrary corrections to the elements—

$$\delta h = -0''.044;$$

$$\delta k = -0''.419$$

so chosen as to make the constant terms of (*v. s. 1*) and (*v. c. 1*) vanish.

Constant terms of the coefficients (v. s. 1), etc.

Action of—	(<i>v. s. 1</i>)	(<i>v. c. 1</i>)	(<i>v. s. 2</i>)	(<i>v. c. 2</i>)	(<i>v. s. 3</i>)	(<i>v. c. 3</i>)
	"	"	"	"	"	"
Neptune	+0.844	-0.093	+0.052	-0.005	+0.002	0.000
Saturn, first order	-0.002	+0.005	-0.039	+0.109	-0.003	+0.011
Jupiter, first order	-0.005	+0.001	-0.100	+0.023	-0.009	+0.002
Saturn, second order	0.000	-0.001	-0.004	-0.012	0.000	0.000
Jupiter, second order	0.000	0.000	0.000	0.000	0.000	0.000
Sum	+0.837	-0.088	-0.091	+0.115	-0.010	+0.013
Δe or $\Delta \pi$	-0.837	+0.088	-0.049	+0.005	-0.003	0.000
Residual constants	0.000	0.000	-0.140	+0.120	-0.013	+0.013

Constant terms of the coefficients (v. s. 1), etc.—Continued.

Action of —	(<i>p. s. 1</i>)	(<i>p. c. 1</i>)	(<i>p. s. 2</i>)	(<i>p. c. 2</i>)	(<i>p. s. 3</i>)	(<i>p. c. 3</i>)
Neptune	— 5	— 30	0	— 4	. .	. .
Saturn, first order	+435	+ 96	+34	— 4	+1	—1
Jupiter, first order	+188	+555	+18	+47	+2	+3
Saturn, second order	+ 7	— 1	+ 2	— 1	. .	. .
Sum	+625	+620	+54	+38	+3	+2
4 elements	+ 9	+ 88	+ 1	+ 6	0	0
Residual constants	+634	+708	+55	+44	+3	+2

Instead of using these total residuals in the tables, the residual due to each planet is tabulated separately.

To form the remaining terms of (*v. s. i*) and (*v. c. i*) the coefficients of the perturbations in Tables A to F which depend on any one argument are added together, and those which vary appreciably with the time are reduced to 1900 by adding half the coefficient of *T'*. The terms of the perturbations are then divided into groups so that the arguments of each group shall differ only by multiples of *g'*. Thus, each group will be of the form—

$$\Sigma a_i \sin (A + ig') + \Sigma b_i \cos (A + ig')$$

which is at once reducible to the form—

$$(v. c. 0) + \Sigma (v. s. i) \sin ig + \Sigma (v. c. i) \cos ig.$$

The arguments *A* have been taken as follows:

Arguments for Tables of Uranus.

$$\begin{aligned} \text{Arg. 1} &= g' - g'' \\ \text{Arg. 2} &= g - g' \\ \text{Arg. 3} &= g_0 - g' \\ \text{Arg. 4} &= g - 2g' \\ \text{Arg. 5} &= 3g' - g \\ \text{Arg. 6} &= -4g' + g + g_0 \\ \text{Arg. 7} &= g' - g + g_0 \\ \text{Arg. 8} &= -g' - 2g + g_0 \\ \text{Arg. 9} &= -g' + 3g - g_0 \\ \text{Arg. 10} &= -3g' + 4g - g_0 \\ \text{Arg. 11} &= -3g' - 3g + 2g_0 \\ \text{Arg. 12} &= -g' + 5g - g_0 \\ \text{Arg. 13} &= -4g' + 7g - 2g_0 \\ \text{Arg. 14} &= -g' - 5g + 3g_0 \end{aligned}$$

In the following exhibits each argument is designated as above by its number in parentheses. The integers at the left, 0, 1, 2, etc., designate the multiples of the arguments in the usual way.

TABLE G.—*Exhibit of the coefficients of the periodic terms of the perturbations of Uranus, reduced to the epoch 1900.*

ACTION OF NEPTUNE; ARG. 1.

(1)	(v. c. 0)		(v. s. 1)		(v. c. 1)		(v. s. 2)		(v. c. 2)	
	cos	sin	cos	sin	cos	sin	cos	sin	cos	sin
0	"	"	"	"	"	"	"	"	"	"
1	0.000	. .	0.000	. .	0.000	. .	+0.002	. .	0.000	. .
2	-27.871	+19.869	-1.191	-1.012	-4.540	+3.743	-0.085	-0.073	-0.287	+0.237
3	+28.793	+10.035	+0.619	-2.068	+0.878	+0.373	+0.033	-0.140	+0.032	+0.027
4	-4.327	+14.280	-16.440	+8.353	+8.913	+18.376	-0.477	+0.214	+0.250	+0.599
5	+2.063	-2.672	+4.244	+2.195	+2.539	-4.664	-0.142	-0.027	-0.005	+0.114
6	-0.845	-0.081	+0.409	+3.037	+2.855	-0.429	+0.841	+2.822	+2.808	-0.841
7	+0.182	+0.306	+0.592	-0.546	-0.500	-0.518	+0.480	-0.624	-0.620	-0.474
8	+0.066	-0.148	-0.255	-0.061	-0.043	+0.213	+0.518	+0.014	+0.014	-0.518
9	-0.076	+0.017	+0.047	+0.114	+0.090	-0.041	-0.079	-0.119	-0.119	+0.079
10	+0.030	+0.027	+0.035	-0.054	-0.040	-0.021	-0.021	+0.047	+0.047	+0.021
11	+0.002	-0.021	-0.030	+0.002	+0.002	+0.030	+0.019	0.000	0.000	-0.019
12	0.011	+0.006	+0.007	+0.012	+0.012	-0.007	-0.006	-0.011	-0.011	+0.006

(1)	(v. s. 3)		(v. c. 3)		10 ⁸ (p. c. 0)		10 ⁸ (p. s. 1)		10 ⁸ (p. c. 1)	
	cos	sin	cos	sin	cos	sin	cos	sin	cos	sin
0	"	"	"	"	"	"	"	"	"	"
1	-0.001	. .	0.000	. .	- . 2	. .	+ 5	. .	+ 59	. .
2	-0.005	-0.003	-0.017	+0.015	-1 139	-1 597	-404	+314	+ 18	- 12
3	+0.002	-0.010	0.000	+0.002	- 642	+1 840	+436	+130	+ 26	-122
4	-0.027	+0.013	+0.015	+0.035	-1 895	+ 571	-450	-839	-1 107	+528
5	0.000	+0.002	+0.002	0.000	+ 403	+ 315	-119	+243	+ 307	+171
6	+0.007	+0.070	+0.070	-0.007	+ 14	-149	-406	+ 52	+ 54	+376
7	-0.005	+0.017	+0.017	+0.005	- 57	+ 33	+ 83	+ 91	+ 77	- 75
8	+0.451	-0.061	-0.061	-0.451	+ 29	+ 12	+ 11	- 45	- 37	- 7
9	-0.087	-0.092	-0.092	+0.087	- 3	- 15	- 20	+ 8	+ 8	+ 20
10	-0.001	-0.070	-0.070	+0.001	- 5	+ 6	+ 7	+ 6	+ 6	- 7
11	-0.003	+0.016	+0.016	+0.003	+ 4	0	0	- 5	- 5	0
12	. .	. .	. .	. .	. .	. .	- 3	+ 1	+ 1	+ 3

TABLE G.—*Exhibit of the coefficients of the periodic terms of the perturbations of Uranus, reduced to the epoch 1900—Continued.*

ACTION OF NEPTUNE; ARG. 1—Continued.

(1)	$10^8 (\rho. s. 2)$		$10^8 (\rho. c. 2)$		$10^8 (\rho. s. 3)$		$10^8 (\rho. c. 3)$		$(b. c. 0)$		$(b. s. 1)$	
	cos	sin	cos	sin	cos	sin	cos	sin	cos	sin	cos	sin
0	+ 1	. .	+ 2	. .	. .	. .	. .	. .	—0.013	. .	+0.071	. .
1	— 34	+29	+ 9	+ 6	. .	. .	. .	. .	+0.025	+0.023	+0.014	—0.183
2	+ 11	+ 6	— 2	+ 9	. .	. .	. .	. .	+0.011	—0.001	—0.151	+0.184
3	+ 25	+61	+43	— 21	+1	+ 4	+ 4	—1	+0.021	+0.002	+0.262	+0.004
4	+ 19	—41	—37	— 15	0	0	0	0	0.000	—0.011	—0.013	—0.026
5	—147	+48	+48	+147	+8	0	0	—8	—0.009	—0.002	+0.033	—0.096
6	+ 38	+27	+27	— 38	—5	— 3	— 3	+5	+0.001	+0.002	—0.027	+0.009
7	— 1	+67	+67	+ 1	+1	+22	+22	—1	. .	. .	+0.010	+0.007
8	+ 18	—10	—10	— 18	+7	— 5	— 5	—7	. .	. .	0.000	—0.006
9	— 8	— 4	— 4	+ 8	+8	+ 1	+ 1	—8	. .	. .	—0.002	+0.001
10	0	+ 3	+ 3	0	. .	. .	. .	. .	. .	. .	. .	. .

(1)	$(b. c. 1)$		$(b. s. 2)$		$(b. c. 2)$		$(b. s. 3)$		$(b. c. 3)$	
	cos	sin	cos	sin	cos	sin	cos	sin	cos	sin
0	—0.016	. .	+0.014	. .	+0.002	. .	. .	. .	. .	. .
1	—0.421	+0.254	—0.019	—0.039	—0.047	+0.027	. .	. .	. .	. .
2	+0.296	+0.165	+0.003	—0.011	—0.007	—0.003	+0.001	—0.002	—0.002	—0.001
3	—0.016	—0.300	—0.093	+0.018	+0.016	+0.089	—0.010	+0.002	+0.002	+0.010
4	—0.036	+0.031	+0.039	+0.035	+0.035	—0.039	0.000	0.000	0.000	0.000
5	—0.086	—0.035	+0.005	—0.049	—0.049	—0.005	0.000	+0.013	+0.013	0.000
6	+0.005	+0.023	—0.009	+0.004	+0.004	+0.009	+0.007	—0.006	—0.006	—0.007
7	+0.007	—0.010	—0.026	—0.009	—0.009	+0.026	—0.009	—0.003	—0.003	+0.009
8	—0.006	0.000	+0.002	+0.008	+0.008	—0.002	0.000	0.000	0.000	0.000
9	+0.001	+0.002	+0.002	—0.001	—0.001	—0.002	—0.003	+0.004	+0.004	+0.003

ACTION OF SATURN; ARG. 2.

(2)	$(v. c. 0)$		$(v. s. 1)$		$(v. c. 1)$		$(v. s. 2)$		$(v. c. 2)$	
	cos	sin	cos	sin	cos	sin	cos	sin	cos	sin
0	0.000	. .	0.000	. .	0.000	. .	—0.042	. .	+0.098	. .
1	—18.585	+12.603	+0.456	—1.406	+1.406	+0.456	+0.030	—0.043	+0.043	+0.030
2	+ 1.658	+ 3.752	—0.907	+3.045	+1.575	+1.597	+0.009	—0.023	+0.023	+0.009
3	—0.661	+ 0.496	—0.368	—0.127	—0.139	+0.478	—0.150	+0.086	+0.018	+0.170
4	—0.175	—0.148	+0.025	—0.109	—0.149	—0.001	—0.020	—0.039	—0.039	+0.024
5	+0.034	—0.065	+0.038	+0.004	—0.014	—0.052	+0.012	—0.009	—0.011	—0.012
6	+0.025	+0.007	+0.006	+0.016	+0.018	—0.006	. .	. .	. .	. .

TABLE G.—*Exhibit of the coefficients of the periodic terms of the perturbations of Uranus, reduced to the epoch 1900—Continued.*

ACTION OF SATURN; ARG. 2—Continued.

(2)	(v. s. 3)		(v. c. 3)		(v. s. 4)		(v. c. 4)		(v. s. 5)		(v. c. 5)	
	cos	sin	cos	sin	cos	sin	cos	sin	cos	sin	cos	sin
0	0.002	..	+0.011	..	0.000	..	0.000	..	0.000	..	0.000	..
1	-5.016	+3.426	+3.430	+5.018	-0.292	+0.203	+0.203	+0.292	-0.017	+0.012	+0.012	+0.017
2	-2.129	-2.220	-2.218	+2.133	0.000	0.000	0.000	0.000	-0.029	-0.008	-0.008	+0.029
3	0.000	+0.002	-0.002	0.000	-0.005	-0.001	-0.001	+0.005	..	..	..	..
4	-0.001	0.000	-0.004	+0.001	0.000	0.000	0.000	0.000	..	..	..	..
5	0.000	+0.001	-0.001	0.000	0.000	+0.007	-0.007	0.000	..	..	..	..

(2)	10^8 (p. c. 0)		10^8 (p. s. 1)		10^8 (p. c. 1)		10^8 (p. s. 2)		10^8 (p. c. 2)	
	cos	sin	cos	sin	cos	sin	cos	sin	cos	sin
0	+ 11	..	+ 437	..	95	..	+ 36	..	- 5	..
1	+530	+7 672	-2 533	-13 179	-13 459	+2 493	+1 709	+2 654	+2 642	-1 703
2	-809	+ 378	- 244	- 225	- 239	+ 600	- 282	+ 21	+ 15	+ 276
3	-115	- 154	+ 31	- 80	- 104	- 29	- 2	- 34	- 32	+ 16
4	+ 35	- 41	+ 24	- 6	0	- 34	+ 9	- 5	- 5	- 9
5	+ 15	+ 8	- 3	+ 8	+ 12	- 3	+ 3	+ 3	+ 3	- 3
6	- 2	+ 6	- 4	+ 1	+ 1	+ 4	..	..	..	..

(2)	10^8 (p. s. 3)		10^8 (p. c. 3)		10^8 (p. s. 4)		10^8 (p. c. 4)		(b. c. 0)		(b. s. 1)	
	cos	sin	cos	sin	cos	sin	cos	sin	cos	sin	cos	sin
0	+ 3	..	- 2	..	0	..	0	..	0.196	..	+0.252	..
1	+366	+540	+540	-366	+ 24	+ 37	+ 37	- 24	-0.076	-0.037	-0.836	+3.063
2	+184	-174	-174	-184	- 11	+ 28	+ 28	+ 11	+0.026	-0.010	+0.101	-0.032
3	- 10	- 7	- 7	+ 10	..	..	..	..	+0.004	+0.006	+0.018	+0.018
4	..	..	..	..	..	..	..	..	-0.002	+0.002	-0.003	+0.006
5	..	..	..	..	..	..	..	..	..	..	-0.002	0.000

(2)	(b. c. 1)		(b. s. 2)		(b. c. 2)		(b. s. 3)		(b. c. 3)	
	cos	sin	cos	sin	cos	sin	cos	sin	cos	sin
0	+0.222	..	-0.052	..	+0.014	..	-0.008	..	+0.004	..
1	+2.021	+2.224	+0.106	+0.086	+0.086	-0.074	-0.067	-0.044	-0.032	+0.063
2	+0.080	-0.051	+0.104	-0.006	-0.034	-0.052	-0.006	+0.009	+0.005	+0.010
3	+0.012	+0.018	+0.005	+0.008	+0.008	-0.003	+0.002	+0.001	-0.005	+0.008
4	-0.006	+0.005	-0.002	+0.002	+0.002	+0.002	+0.001	-0.002	-0.002	-0.001
5	0.000	-0.002	..	..	..	..	..	..	..	..

TABLE G.—*Exhibit of the coefficients of the periodic terms of the perturbations of Uranus, reduced to the epoch of 1900—Continued.*

ACTION OF SATURN; SECULAR VARIATIONS OF THE COEFFICIENTS; ARG. 2.

(2)	(v. c. 0)		(v. s. 1)		(v. c. 1)	
	cos	sin	cos	sin	cos	sin
1	"	"	"	"	"	"
2	+0.046	-0.085	+1.390	+0.984	+0.986	-1.398
	.	.	-0.001	-0.020	-0.014	-0.017

(2)	(v. s. 2)		(v. c. 2)		(v. s. 3)		(v. c. 3)	
	cos	sin	cos	sin	cos	sin	cos	sin
1	"	"	"	"	"	"	"	"
2	+1.83	+0.15	+0.15	-1.83	+0.090	+0.011	+0.011	-0.090
	-0.001	-0.027	-0.027	+0.001	+0.050	+0.049	+0.049	-0.050

	(\rho. s. 1)		(\rho. c. 1)		(\rho. s. 2)		(\rho. c. 2)	
	cos	sin	cos	sin	cos	sin	cos	sin
	-91	+132	+132	+91	+3	-41	-41	-3
	+ 3	+ 1	+ 1	- 3	+4	- 1	- 1	-4

ACTION OF JUPITER; ARG. 3.

(3)	(v. c. 0)		(v. s. 1)		(v. c. 1)		(v. s. 2)		(v. c. 2)	
	cos	sin	cos	sin	cos	sin	cos	sin	cos	sin
0	"	"	"	"	"	"	"	"	"	"
1	0.000	.	0.000	.	0.000	.	-0.100	.	+0.025	.
2	-21.320	-48.623	+4.469	-1.833	-0.803	-2.009	+0.202	-0.019	-0.015	-0.124
3	-0.179	-0.215	-1.134	+0.465	-0.575	-1.224	+0.036	-0.025	+0.001	+0.020
4	+0.024	+0.008	-0.007	+0.014	+0.006	-0.003	-0.043	+0.021	-0.017	-0.043

(3)	10 ⁸ (\rho. c. 0)		10 ⁸ (\rho. s. 1)		10 ⁸ (\rho. c. 1)		10 ⁸ (\rho. s. 2)		10 ⁸ (\rho. c. 2)	
	cos	sin	cos	sin	cos	sin	cos	sin	cos	sin
0	- 1	.	+188	.	+555	.	+18	.	+47	.
1	-10 302	+4 518	-461	-952	-586	+ 261	-41	-61	-67	+37
2	+ 19	- 32	+121	+256	-236	+ 93	+ 1	- 4	+ 8	- 7
3	- 2	+ 6	- 3	0	- 2	+ 3	+ 4	+ 9	- 9	+ 4

TABLE G.—*Exhibit of the coefficients of the periodic terms of the perturbations of Uranus, reduced to the epoch 1900—Continued.*

ACTION OF JUPITER; ARG. 3—Continued.

(3)	(b. c. 0)		(b. s. 1)		(b. c. 1)	
	cos	sin	cos	sin	cos	sin
0	"	"	"	"	"	"
1	+0.066	. .	+0.059	. .	+0.054	. .
2	—0.012	—0.006	—0.275	+0.583	—0.591	—0.287
3	. .	. .	—0.002	+0.006	—0.006	—0.002
4	. .	. .	. .	. .	. .	. .

(3)	(b. s. 2)		(b. c. 2)		(b. s. 3)		(b. c. 3)	
	cos	sin	cos	sin	cos	sin	cos	sin
0	"	"	"	"	"	"	"	"
1	0.018	. .	—0.012	. .	—0.002	. .	—0.001	. .
2	—0.024	+0.046	—0.048	—0.020	+0.003	—0.006	+0.006	+0.003
3	—0.052	+0.108	—0.108	—0.052	+0.001	—0.002	+0.002	+0.001
4	. .	. .	. .	. .	—0.003	+0.006	—0.006	—0.003

ACTION OF JUPITER AND SATURN; ARGUMENTS 4 TO 14.

" "		" "		" "		" "	
(v. c. 0) = +19.508 cos (4) +142.938 sin (4)		(v. c. 1) = +0.020 cos (6) +0.031 sin (6)		(v. s. 2) = +0.027 cos (8) +0.002 sin (8)		(v. c. 2) = —0.002 cos (8) +0.027 sin (8)	
+ 1.924 cos 2 (4) — 0.093 sin 2 (4)		—0.003 cos (7) —0.035 sin (7)		—0.018 cos 2 (8) —0.003 sin 2 (8)		—0.015 cos 2 (8) +0.010 sin 2 (8)	
+ 0.055 cos 3 (4) + 0.039 sin 3 (4)		—0.010 cos (8) +0.030 sin (8)		—0.015 cos (11) —0.032 sin (11)		—0.050 cos (11) —0.047 sin (11)	
+75.70 cos (5) —102.30 sin (5)		—0.296 cos 2 (8) +0.206 sin 2 (8)		+0.011 cos (13) +0.066 sin (13)		—0.046 cos (13) —0.011 sin (13)	
— 0.183 cos 2 (5) — 0.573 sin 2 (5)		—0.140 cos (9) —0.003 sin (9)		10 ⁸ (p. c. 0) = — 36 cos 2 (8) — 56 sin 2 (8)		(p. s. 1) = + 21 cos 2 (8) + 62 sin 2 (8)	
+ 0.030 cos (6) + 0.018 sin (6)		—0.154 cos (10) —0.209 sin (10)		+ 1 cos (12) + 32 sin (12)		— 28 cos (13) + 18 sin (13)	
— 0.012 cos (7) — 0.042 sin (7)		—0.027 cos (11) +0.076 sin (11)		— 1 cos (13) — 8 sin (13)		(p. c. 1) = — 4 cos (8) — 40 cos 2 (8) + 35 sin 2 (8)	
— 0.091 cos (8) + 0.013 sin (8)		+0.152 cos (13) —0.241 sin (13)		+ 25 cos (14) + 23 sin (14)		+ 22 cos (13) + 8 sin (13)	
— 0.691 cos 2 (8) + 0.376 sin 2 (8)							
+ 0.216 cos (9) — 0.038 sin (9)							
— 0.052 cos (10) + 0.054 sin (10)							
— 0.004 cos (11) + 0.042 sin (11)							
— 0.150 cos (12) + 0.004 sin (12)							
— 0.056 cos (13) + 0.007 sin (13)							
— 0.110 cos (14) + 0.117 sin (14)							

" "		" "	
(v. s. 1) = + 0.027 cos (6) — 0.014 sin (6)		10 ⁸ (p. c. 0) = — 4 sin (8) — 56 sin 2 (8)	
— 0.029 cos (7) — 0.015 sin (7)		+ 1 cos (12) + 32 sin (12)	
+ 0.028 cos (8) + 0.002 sin (8)		— 1 cos (13) — 8 sin (13)	
— 0.368 cos 2 (8) — 0.056 sin 2 (8)		+ 25 cos (14) + 23 sin (14)	
— 0.001 cos (9) — 0.160 sin (9)			
+ 0.135 cos (10) — 0.112 sin (10)			
+ 0.012 cos (11) + 0.061 sin (11)			
+ 0.219 cos (13) + 0.264 sin (13)			

III.—STATEMENT OF THE QUANTITIES CONTAINED IN THE SEVERAL TABLES.

§ 1. *Epochs and arguments.*

The methods adopted in the tabulation of the preceding results are in large part determined by the form in which the perturbations have been computed and reduced. The small periodic perturbations by Neptune having been computed with the fixed elliptic elements of the two planets for 1900, we should use the mean anomalies g'' and g' from the fixed perihelion of this epoch in forming the arguments of the tables of perturbations by Neptune.

But in the action of Jupiter and Saturn the perihelia of 1850 have been in the first place taken as fixed, and the effects of their secular variations on the perturbations have been included as terms of the second order. Hence, in these cases, all the mean anomalies should be reckoned from the perihelia of 1850, and those of Jupiter and Saturn should be taken as increasing uniformly with the time, because the effect of the great inequality is included in the terms of the second order.

The question whether the great inequality of the mean longitude of Uranus produced by Neptune should be included in the mean anomaly of Uranus is a question the decision of which is of no practical importance, since the effect of including it will be only two-hundredths of a second for the century before or after the central epoch. I think that, contrary to what I have done in the case of the four inner planets, it is better to omit it and regard the mean anomaly as increasing uniformly with the time.

In the case of the argument for the equation of the center we recall that, in the transformations of the preceding section, the effects of the secular variation of the eccentricity and perihelion of Uranus, as well as of its variation of long period, were included in the values of (*v. s. i*) and (*v. c. i*) developed in powers of the time. But the inequality of long period produced by Neptune in the mean longitude is omitted. Hence the argument of the equation of the center should be affected with this inequality, and the secular variation of the eccentricity should be omitted, as its effect is included in the values of (*v. s. i*) and (*v. c. i*) already developed.

The adopted constituents of the arguments are shown in Table H following. There being two values to be used in the case of Uranus—that to be combined with Neptune is called g' ; that for Jupiter and Saturn g_1' . The definitions of the constituents are these:

g'' , the mean anomaly of Neptune from the fixed perihelion of 1900, as adopted in computing the perturbations, the mean longitude being so taken as to increase uniformly with the time and represent its values, as affected by the terms of long period, at the two epochs 1850 and 1900;

g' , the mean anomaly of Uranus from the fixed perihelion of 1900, taken as in the case of Neptune;

g_1' , the same from the fixed perihelion of 1850;

g , the mean anomaly of Saturn from its fixed perihelion of 1850;

g_0 , the same for Jupiter.

The units of the arguments 1 to 5 have been taken so that 600 shall make a circumference, and those of 6 to 14 so that 60 shall make a circumference. Hence—

$$\text{Unit of arguments 1 to 5} = 0^\circ.6$$

$$\text{Unit of arguments 6 to 14} = 6^\circ.0$$

The adopted numerical values of the constituents of the arguments are as follows:

TABLE H.—*Constituents of arguments for periodic perturbations of Uranus.*

Planet.	Symbol.	Value of argument for—		Centennial motion.	Increment in four years.
		1850	1900		
Neptune	g''	292.109	41.339 = 68.899	218.467 = 364.112	14.564 5
Uranus	g'	220.077	74.320 = 123.867	428.498 = 714.163	28.566 5
Uranus	g_1'	220.170	74.412 = 124.021	428.498 = 714.163	28.566 5
Saturn	g	284.713	175.753 = 292.922	1 222.113 = 2 036.855	81.474 2
Jupiter	g_0	148.005	225.417 = 375.694	3 034.904 = 5 058.174	202.327 0

The numerical values of the arguments necessary for the tables of perturbations are these:

$$\begin{aligned}
 \text{Arg 1:} & \quad g' - g'' = 54.968 + 350.052 T \\
 \text{2:} & \quad g - g_1' = 168.901 + 1 322.692 T \\
 \text{3:} & \quad g_0 - g_1' = 251.673 + 4 344.011 T \\
 \text{4:} & \quad g - 2g_1' = 44.880 + 608.529 T \\
 \text{5:} & \quad 3g_1' - g = 79.141 + 105.634 T \\
 \text{6:} & \quad -4g_1' + g + g_0 = 17.3 + 423.8 T \\
 \text{7:} & \quad g_1' - g + g_0 = 20.7 + 373.5 T \\
 \text{8:} & \quad -g_1' - 2g + g_0 = 26.583 + 27.030 T \\
 \text{9:} & \quad -g_1' + 3g - g_0 = 37.91 + 33.82 T \\
 \text{10:} & \quad -3g_1' + 4g - g_0 = 42.39 + 94.68 T \\
 \text{11:} & \quad -3g_1' - 3g + 2g_0 = 10.1 + 186.3 T \\
 \text{12:} & \quad -g_1' + 5g - g_0 = 36.49 + 441.19 T \\
 \text{13:} & \quad -4g_1' + 7g - 2g_0 = 20.30 + 128.50 T \\
 \text{14:} & \quad -g_1' - 5g + 3g_0 = 13.85 + 427.61 T
 \end{aligned}$$

As in previous tables of this series, a tabular year is adopted which coincides with the ordinary calendar year, except in January of leap years, when the count is one day less. The tabular year commences with Greenwich mean noon of December 31 of the year preceding in the case of common years, and from Greenwich mean noon January 1 of leap years.

Table I gives the value of the mean longitude, mean anomaly, longitude of node, and arguments for the beginning of every fourth tabular year from 1600 to 2000. The tables are limited to this period, because previous to 1600 only an

approximate ephemeris can be required, and the data for this purpose can readily be derived by the computer as he may have occasion for them.

l is the mean longitude of the planet, counted from the movable mean equinox in the usual way, taken as increasing uniformly with the time, using the value of the mean motion and motion of the equinox corresponding to the fundamental epoch 1900.0.

g is the mean anomaly of the planet, taken with the uniform sidereal motion from the fixed perihelion of 1900.

θ is the longitude of the node from the mean equinox of the date, taken as increasing uniformly with the motion for 1900.

The arguments 1 to 14 need no explanation, being derived from the expressions already given.

Table II gives the reductions of the quantities of Table I to the beginning of each month in a four-year cycle.

Table III gives the motions of the epochs and arguments in days. The argument with which it is to be entered is the day of the month, except in January of leap years, when the day is one less than that of the month, being counted from January 1, and February of 1700, 1800, and 1900, when it is 1 greater, being counted from February -1.

§ 2. Tables of the longitude.

Table IV gives the values of the secular terms and of the terms depending on the three arguments of long period. They are expressed as values of the coefficients in the form (1), page 304. The table comprises the sum of the following five classes of terms:

α . The secular terms proper as given in (A), page 308, the part depending on the action of Neptune being multiplied by 1.02.

β . The terms of long period due to the action of Neptune and depending on the argument $2g'' - g'$ given in (B), page 310. The constant term of l or (*v. c. o*) and the term in T are omitted, being taken as included in the mean longitude and mean motion.

The combination of terms (B) and (A) is as follows:

$$\begin{aligned}
 l &= \overset{''}{33.100} T^2 - \overset{''}{0.0173} T^3 - \overset{''}{0.0622} T^4 - \overset{''}{0.002} T^5 & (B) \\
 (v. s. 1) &= + 123.494 T - 1.562 T^2 - 0.516 T^3 - 0.014 T^4 & (B) \\
 &\quad - 11.177 + 0.011 \quad . \quad . \quad . \quad . \quad . & (A) \\
 &= + 112.317 T - 1.551 T^2 - 0.516 T^3 - 0.014 T^4 \\
 (v. c. 1) &= - 41.127 T - 9.744 T^2 - 0.067 T^3 + 0.016 T^4 & (B) \\
 &\quad - 27.212 + 0.023 \quad . \quad . \quad . \quad . \quad . & (A) \\
 &= - 68.339 T - 9.721 T^2 - 0.067 T^3 + 0.016 T^4 \\
 (v. s. 2) &= + 7.258 T - 0.092 T^2 - 0.031 T^3 & (B) \\
 &\quad - 0.653 + 0.001 \quad . \quad . \quad . \quad . & (A) \\
 &= + 6.605 T - 0.091 T^2 - 0.031 T^3
 \end{aligned}$$

$$\begin{aligned}
 (v. c. 2) &= - \overset{''}{2.418} T - \overset{''}{0.573} T^2 - \overset{''}{0.004} T^3 & (B) \\
 &= - 1.595 + 0.001 \dots & (A) \\
 &= - 4.013 T - 0.572 T^2 - 0.004 T^3 \\
 (v. s. 3) &= + 0.445 T - 0.005 T^2 - 0.002 T^3 & (B) \\
 &= 0.042 \dots & (A) \\
 &= + 0.403 T - 0.005 T^2 - 0.002 T^3 \\
 (v. c. 3) &= - 0.148 T - 0.035 T^2 & (B) \\
 &= 0.100 \dots & (A) \\
 &= - 0.248 T - 0.035 T^2 \\
 (v. s. 4) &= + 0.063 (v. s. 3) \\
 (v. c. 4) &= + 0.063 (v. c. 3)
 \end{aligned}$$

γ The terms of long period of the second order depending on the arguments A and A_1 , and classed as (C). These terms have been computed for every 100 years with the following results:

Date.	(v. c. 0)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)
	''	''	''	''	''
1500	-27.20	-2.89	-10.48	-0.13	-0.75
1600	-30.54	-5.82	-8.75	-0.36	-0.65
1700	-28.70	-7.63	-5.43	-0.54	-0.45
1800	-22.12	-8.00	-1.28	-0.61	-0.16
1900	-12.03	-6.86	+2.92	-0.56	+0.14
2000	-0.16	-4.49	+6.44	-0.42	+0.40
2100	+11.42	-1.39	+8.69	-0.21	+0.59

By an independent computation the expressions on which these quantities are based, as given in § 2 preceding, have been developed in powers of the time, taking 200 years as the unit, and 1800 as the zero epoch. The results are:

$$\begin{aligned}
 (v. c. 0) &= - \overset{''}{22.115} + \overset{''}{17.067} \tau + \overset{''}{7.103} \tau^2 - \overset{''}{2.019} \tau^3 - \overset{''}{0.365} \tau^4 + \overset{''}{0.063} \tau^5 + \overset{''}{0.005} \tau^6 \\
 (v. s. 1) &= - 7.985 + 0.794 \tau + 3.054 \tau^2 - 0.141 \tau^3 - 0.219 \tau^4 + 0.007 \tau^5 + 0.005 \tau^6 \\
 (v. c. 1) &= - 1.304 + 8.618 \tau + 0.108 \tau^2 - 1.062 \tau^3 + 0.033 \tau^4 + 0.037 \tau^5 - 0.005 \tau^6 \\
 (v. s. 2) &= - 0.592 - 0.031 \tau + 0.222 \tau^2 + 0.001 \tau^3 - 0.017 \tau^4 \\
 (v. c. 2) &= - 0.167 + 0.594 \tau + 0.035 \tau^2 - 0.070 \tau^3 + 0.001 \tau^4 \\
 (v. s. 3) &= - 0.031 - 0.002 \tau + 0.009 \tau^2 \\
 (v. c. 3) &= - 0.008 + 0.030 \tau + 0.003 \tau^2
 \end{aligned}$$

τ = interval from 1800, in terms of 200 years as the unit of time.

When the values of these expressions are computed for the epochs 1600-2000, and each reduced to the same system by the addition of an arbitrary constant, or, in the case of (v. c. 0), by the addition of an expression of the form $a + b\tau$, they are found to differ by quantities of which the mean value is less than 0''.01.

The constants in question are, in accordance with our general plan, to be so taken as to represent those arbitrary corrections to the elements which will make the values of

$$(v. c. 0), D_t (v. c. 0), (v. s. 1), \text{ and } (v. c. 1)$$

all vanish at the epoch 1900.0. This will leave, for the remaining quantities, at the epoch 1900, the residual quantities:

$$\begin{aligned} (v. s. 2) \text{ for } 1900 &= -0.15 \\ (v. c. 2) \text{ for } 1900 &= -0.04 \\ (v. s. 3) \text{ for } 1900 &= +0.02 \\ (v. c. 3) \text{ for } 1900 &= -0.01 \end{aligned}$$

δ . In column l the minute secular acceleration of the second order in the mean longitude containing the square of the time as a factor.

In the perturbations as tabulated in the preceding section the value of the coefficient of T^2 in this expression is $-0''.024$. But this includes only the products of the masses of Jupiter and Saturn. The formulæ for computing the complete values of the term are given in *Elements and Constants*, page 187. By means of them Dr. HARSHMAN has computed the value of the acceleration produced by each of the three disturbing planets, taking into account the complete values of their several secular variations. The results are:

$$\begin{array}{rcl} \text{Action of Jupiter;} & D_t^2 l = & +0.003 \ 8 \\ \text{Action of Saturn;} & & -0.032 \ 8 \\ \text{Action of Neptune;} & & +0.000 \ 2 \\ \hline \text{Sum,} & & -0.028 \ 8 \end{array}$$

Thus, the value of the term in question is $-0''.014 \ T^2$.

ϵ . In column l the secular variation of the precession from 1900, of which the value is—

$$\Delta p = 1''.109 \ T^2$$

The column g contains the preceding values (β) and (δ) in the mean longitude and is expressed in minutes of arc.

Table V contains the values of the coefficients of the true longitude produced by the action of Neptune ($v. c. 0$), ($v. s. 1$), etc., to ($v. c. 3$), as given in Table G of the preceding section. The numbers of Table G have been multiplied by 1.02 for the new mass of Neptune.

Table VI contains the corresponding quantities for the action of Saturn, omitting the terms depending on the arguments $2g - g_1'$ and $3g_1' - g$. The numbers are corrected to reduce the values of g from 1850 to 1900.

Table VII contains the secular variations of the coefficients.

Table VIII contains the terms of the coefficients due to the action of Jupiter, with the same modification as in the case of Saturn.

Table IX contains the inequality of the true longitude produced principally by

the action of Saturn, but including the terms of the second order depending on the same argument due to the product of the masses of Jupiter and Saturn, depending on the argument $2g - g'$, called (4) in Table G, and its multiple.

Table X contains the inequalities of the true longitude depending on the argument $3g' - g$ and its multiples.

Tables XI to XIX contain the small terms of the second order depending on the products of the masses of Jupiter and Saturn.

Table XX contains the equation of the center, computed with the eccentricity of 1900. The expression is—

$$\begin{aligned} E = & + 19\,401.813 \sin g \\ & + 570.161 \sin 2g \\ & + 23.233 \sin 3g \\ & + 1.082 \sin 4g \\ & + .0054 \sin 5g \end{aligned}$$

Table XXI contains the reduction to the ecliptic, computed with the inclination of 1900.

§ 3. *Tables of the logarithm of radius vector.*

Tables XXII to XXX give the numbers for computing the logarithm of the radius vector in units of the seventh place of decimals.

Table XXII contains the secular terms and those terms of long period which can most conveniently be tabulated as a function of the time. They are composed of the following classes of terms:

A. The secular terms proper, as thus designated on page 308. When the portion due to the action of Neptune is increased by 0.02 of its amount, these terms become—

$$\begin{aligned} 10^8 (\rho. c. 0) &= - 26 T \\ 10^8 (\rho. s. 1) &= - 2\,874 T + 3 T^2 \\ 10^8 (\rho. c. 1) &= + 1\,175 T - 1 T^2 \\ 10^8 (\rho. s. 2) &= - 201 T \\ 10^8 (\rho. c. 2) &= + 81 T \\ 10^8 (\rho. s. 3) &= - 8 T \\ 10^8 (\rho. c. 3) &= + 3 T \end{aligned}$$

B. The terms of long period due to the action of Neptune, and depending on the argument $2g'' - g_1'$ as found on page 310. Multiplying them by 1.02 they become—

$$\begin{aligned} 10^8 (\rho. c. 0) &= - 984 T - 4 T^2 + 3 T^3 \\ 10^8 (\rho. s. 1) &= - 4\,327 T - 1\,024 T^2 - 7 T^3 + 2 T^4 \\ 10^8 (\rho. c. 1) &= - 12\,980 T + 164 T^2 + 54 T^3 + 1 T^4 \\ 10^8 (\rho. s. 2) &= - 306 T - 72 T^2 \\ 10^8 (\rho. c. 2) &= - 918 T + 11 T^2 + 4 T^3 \\ 10^8 (\rho. s. 3) &= - 20 T - 5 T^2 \\ 10^8 (\rho. c. 3) &= - 61 T + 1 T^2 \end{aligned}$$

C. The terms of the second order of long period depending on the arguments

$$A = 5g - 2g_0$$

and

$$A_1 = -3g' + 6g - 2g_0$$

The only terms depending on A which it is needful to include are—

$$10^8 \delta \rho = +58 \cos(A - g) - 24 \sin(A - g)$$

which give—

$$10^8 (\rho. s. 1) = +58 \sin A + 24 \cos A$$

$$10^8 (\rho. c. 1) = +58 \cos A - 24 \sin A.$$

The terms of $\delta \rho$ depending on A_1 give—

$$10^8 (\rho. c. 0) = (-250 + 3 T') \cos A_1 - (4 + 6 T') \sin A_1$$

$$10^8 (\rho. s. 1) = (556 + 18 T') \cos A_1 - (807 - 26 T') \sin A_1$$

$$10^8 (\rho. c. 1) = (523 - 22 T') \cos A_1 + (564 + 10 T') \sin A_1$$

$$10^8 (\rho. s. 2) = (30 + 0 T') \cos A_1 - (8 - 1 T') \sin A_1$$

$$10^8 (\rho. c. 2) = -(12 + 1 T') \cos A_1 + (32 + 0 T') \sin A_1$$

The numerical values of these quantities have been computed for equidistant epochs through the period of the tables with the following results:

Date.	$10^8 (\rho. c. 0)$	$10^8 (\rho. s. 1)$	$10^8 (\rho. c. 1)$	$10^8 (\rho. s. 2)$	$10^8 (\rho. c. 2)$
1500	+109	-1 076	+298	-22	+33
1600	+ 3	- 890	+609	- 9	+32
1700	-100	- 544	+791	+ 3	+25
1800	-184	- 114	+812	+14	+14
1900	-234	+ 314	+679	+25	- 1
2000	-244	+ 657	+427	+30	-14
2100	-212	+ 866	+116	+29	-26

D. But they are to be modified on account of the virtual correction of the elements applied to cause the corresponding perturbations of longitude to vanish at 1900. These corrections were:

$$\delta l = +12''.03 - 11''.31 T$$

$$\delta n = -11''.31$$

$$\delta e = + 3''.43$$

$$e \delta \pi = + 1''.46$$

The table of the elliptic radius vector being entered with a value of g , which includes the correction δl , the effect of this correction is to be omitted. To find the effect of the other correction we use the expression for Napierian log r to quantities in e^2 :

$$\log r = \log a + \frac{1}{4} e^2 - e \cos g - \frac{3}{4} e^2 \cos 2g$$

Whence, for the required corrections to $\log r$:

$$\delta \log r = \frac{\delta a}{a} + \frac{1}{2} e \delta e - \cos g. \delta e - \frac{3}{2} \cos 2g. e \delta e - \sin g. e \delta \pi - \frac{3}{2} \sin 2g. e^2 \delta \pi$$

We have

$$\frac{\delta a}{a} = -\frac{2}{3} \frac{\delta n}{n} = +0.000\ 004\ 89$$

$$\frac{1}{2} e \delta e = +0.000\ 000\ 39$$

Multiplying these expressions by $10^8 \times$ modulus, we find for the corrections in question—

$$10^8 (\rho. c. 0) = +229$$

$$10^8 (\rho. s. 1) = -308$$

$$10^8 (\rho. c. 1) = -724$$

$$10^8 (\rho. s. 2) = -22$$

$$10^8 (\rho. c. 2) = -51$$

It will be seen that these corrections nearly annul the terms at the epoch 1900.

The sum of the quantities (A) to (D) are those to be included in the table. The table also contains a constant $+33 \div 10^8$ being the correction to reduce $\log a$ as given below to the value on page 292.

Table XXIII contains the coefficients for the perturbations of the common logarithm of the radius vector produced by Neptune, and depending on Argument 1, as found in Table G preceding. The values of Table G are multiplied by 1.02 for the new mass of Neptune.

Tables XXIV and XXV contain the corresponding coefficients for the perturbations produced by Saturn and Jupiter, and depending on Arguments 2 and 3, as found in Table G.

Tables XXVI to XXIX contain the small terms of the second order depending on the arguments given.

Table XXX contains the principal or elliptic term of the logarithm of the radius vector, including the constant terms due to the action of the planets. For the constant term of the table we have

$$\text{Log } a, \text{ including constant terms; } \dots \dots \dots 1.283\ 096\ 78$$

$$\text{Terms depending on the eccentricity; } \dots \dots \dots +0.000\ 240\ 36$$

$$\text{Constant term of the table; } \dots \dots \dots 1.283\ 337\ 14$$

The formula for the table is—

$$\begin{aligned} \log r = & 1.283\ 337\ 14 \\ & - 20\ 414\ 14 \cos g \\ & - 719\ 90 \cos 2g \\ & - 31\ 97 \cos 3g \\ & - 1\ 57 \cos 4g \\ & - 8 \cos 5g \end{aligned}$$

In this, as in the three preceding tables, the eighth place of decimals was included in computing the table, but was dropped in copying it.

§ 4. *Tables of the latitude.*

Tables XXXI, XXXII, and XXXIII contain the coefficients for the perturbations of the latitude produced by the three disturbing planets.

Table XXXIV contains the value of the inclination i of the orbit to the moving ecliptic, including the terms of long period and of its log sine, for every ten years from 1600 to 2000.

IV.—PRECEPTS FOR THE USE OF THE TABLES.

The purpose of the tables is to enable the astronomer to compute the longitude, latitude, and radius vector of Uranus, referred to the ecliptic and mean equinox of the date, for any Greenwich mean noon between the years 1600 and 2000, inclusive. In the event of a position being required without those dates, an extension of the principal numbers can be made without serious difficulty.

The date is first to be expressed in terms of the Gregorian calendar.

Enter Table I with the year, or the first preceding year found therein, and take out all the numbers of the table in the horizontal line with the year.

Enter Table II with the excess of the given year above that with which Table I was entered and with the month. Take out the numbers which are in the same horizontal line with the month and write them under the corresponding numbers from Table I.

Enter Table III with the day of the month, except in January of leap years, when it must be entered with a number one less than the day of the month, and in February of 1700, 1800, and 1900, when it must be entered with a number one greater than the day of the month. Take out the numbers in the horizontal line of the day and write them under the corresponding ones from the preceding tables.

If the hour is not Greenwich noon, compute the motion for the fraction of a day after that noon, and add it to the motion for days.

Form the sums of these numbers. If the sums of the numbers for any of the arguments exceed the period of the argument, subtract the greatest multiple of the period which the sum contains. This multiple is 600 for arguments 1 to 5 and 60 for the remaining arguments. The remainder will be the arguments with which the subsequent tables are entered.

For the longitude enter Table IV with the date expressed in years and fractions, and interpolate the various numbers to the date. The value of l is to be added with those of l already found, and that of g with those of g already found. The sum of the values of l and g from the first four tables will be the values to be used in the subsequent computations.

Enter Tables V to XIX with their respective arguments, and take out the several quantities (*v. c. o.*), (*v. s. 1*), etc., writing the corresponding values under those from Table IV. The algebraic sum of the partial values of each of these quantities will be the final values to be used in the computation.

With these final values compute the expression—

$$\delta v = (v. c. 0) + (v. s. 1) \sin g + (v. c. 1) \cos g + (v. s. 2) \sin 2g + \text{etc.}$$

The expression δv will be the perturbation of the longitude of Uranus.

Enter Table XX with argument g , as found from Tables I to IV, inclusive, and take out the value of E . The sum of the quantities

$$v = l + \delta v + E$$

will be the orbit longitude of Uranus referred to the ecliptic and mean equinox of the date.

From v subtract θ . The remainder will be u , the argument of latitude of Uranus.

Enter Table XXI with argument u , and take out the reduction R to the ecliptic. This reduction being applied to the orbit longitude with its proper algebraic sign will be the longitude of Uranus referred to the ecliptic and mean equinox of the date.

To find the logarithm of the radius vector we enter Table XXII with the date, and interpolate the seven quantities found therein to the date.

Enter Tables XXIII to XXIX with their respective arguments, and take out the values of all the quantities therein, and add them algebraically to the corresponding quantities from Table XXII.

The sum—

$$\delta \rho = (\rho. c. 0) + (\rho. s. 1) \sin g + (\rho. c. 1) \cos g + (\rho. s. 2) \sin 2g + \text{etc.},$$

will be the perturbation of the logarithm of the radius vector in units of the seventh decimal place.

Enter Table XXX with the argument g , and take out the value of $\log r$. The sum—

$$\log r + \delta \rho$$

will be the common logarithm of the radius vector of Uranus for the date.

Enter Tables XXXI to XXXIII with their respective arguments, and take out the values of the several quantities found therein. The sum of corresponding quantities will be the final value to be used in the computation of the expression—

$$\delta \beta = (b. c. 0) + (b. s. 1) \sin g + (b. c. 1) \cos g + (b. s. 2) \sin 2g + \text{etc.}$$

$\delta \beta$ will be the perturbation of latitude.

Enter Table XXXIV with the date, and take from it the value of $\log \sin i$. Compute—

$$\begin{aligned} \sin \beta_0 &= \sin i \sin u \\ \beta &= \beta_0 + \delta \beta \end{aligned}$$

Then β will be the latitude of Uranus referred to the ecliptic of the date.

To obtain the apparent geocentric place the ecliptic longitude is to be corrected for the nutation in longitude in accordance with astronomical practice.

As an example of the use of the tables, we give a computation of the heliocentric place of Uranus for the date 1854, December 5, Greenwich mean noon.

Uranus—Heliocentric Place.

[1854, December 5. Greenwich mean noon.]

	<i>l</i>			<i>g</i>			<i>θ</i>			<i>1</i>	<i>2</i>	<i>3</i>
	<i>°</i>	<i>'</i>	<i>''</i>	<i>°</i>	<i>'</i>	<i>''</i>	<i>°</i>	<i>'</i>	<i>''</i>			
Table I	37	1	22.50	228	38.647		73	14	44.2	486.95	134.05	566.67
Table II	12	31	23.72	12	28.956				53.4	10.20	38.53	126.54
Table III		3	31.86		3.520				0.3	0.05	0.18	0.59
Table IV	+		7.17	+	0.112		+		0.4	.	.	.
Sum	49	36	25.25	241	11.235		73	15	38.3	497.20	172.76	93.80

	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>	<i>12</i>	<i>13</i>	<i>14</i>
Table I	352.803	28.440	54	21	13.61	21.7	56.9	41	4.7	18.6	48.6
Table II	17.727	3.077	12	11	0.79	1.0	2.8	5	12.9	3.7	12.5
Table III	0.083	0.014	0	0	0.00	0.0	0.0	0	0.1	0.0	0.1
Sum	370.613	31.531	6	32	14.40	22.7	59.7	46	17.7	22.3	1.2

	(<i>v. c. 0</i>)	(<i>v. s. 1</i>)	(<i>v. c. 1</i>)	(<i>v. s. 2</i>)	(<i>v. c. 2</i>)	(<i>v. s. 3</i>)	(<i>v. c. 3</i>)	(<i>v. s. 4</i>)	(<i>v. c. 4</i>)	(<i>v. s. 5</i>)	(<i>v. c. 5</i>)
Table IV	.	-51.58	+26.98	-3.17	+1.52	-0.16	+0.10	-0.01	+0.01	.	.
Table V	-62.80	+22.76	-18.30	+4.35	+0.55	+0.42	+0.50	.	.	.	.
Table VI	+12.34	-2.33	-2.57	-0.31	-0.02	+7.40	+5.11	+0.27	+0.24	+0.04	+0.01
Table VII	+0.04	-0.29	+0.71	+0.12	+0.80	+0.04	+0.05	.	.	.	.
Table VIII	-52.43	+1.84	-3.03	0.00	-0.06	.	.	.	.	.	.
Table IX	-110.65	.	.	.	.	.	.	.	.	.	.
Table X	+37.94	.	.	.	.	.	.	.	.	.	.
Table XI	+0.03	+0.01	+0.03	.	.	.	.	.	.	.	.
Table XII	+0.02	+0.03	+0.01	.	.	.	.	.	.	.	.
Table XIII	+0.74	+0.36	+0.35	+0.02	+0.04	.	.	.	.	.	.
Table XIV	-0.18	-0.11	+0.10	.	.	.	.	.	.	.	.
Table XV	-0.05	+0.14	-0.14	.	.	.	.	.	.	.	.
Table XVI	-0.04	-0.06	-0.08	+0.03	+0.04	.	.	.	.	.	.
Table XVII	+0.05	.	.	.	.	.	.	.	.	.	.
Table XVIII	+0.04	+0.04	-0.28	+0.04	+0.02	.	.	.	.	.	.
Table XIX	-0.10	.	.	.	.	.	.	.	.	.	.
Sum	-175.05	-29.19	+3.78	+1.08	+2.89	+7.70	+5.76	+0.26	+0.25	+0.04	+0.01

	(<i>ρ. c. 0</i>)	(<i>ρ. s. 1</i>)	(<i>ρ. c. 1</i>)	(<i>ρ. s. 2</i>)	(<i>ρ. c. 2</i>)	(<i>ρ. s. 3</i>)	(<i>ρ. c. 3</i>)	(<i>ρ. s. 4</i>)	(<i>ρ. c. 4</i>)
Table XXII	+50	+285	+538	+21	+34	+1	+3	.	.
Table XXIII	+162	-28	+178	-20	+18	-3	0	.	.
Table XXIV	+789	-1141	+551	+250	-248	+36	-26	+3	-6
Table XXV	-200	-67	+63	-6	+4	.	.	.	.
Table XXVI	+2	-1	+5	.	.	.	.	.	.
Table XXVII	+3	.	.	.	.	.	.	.	.
Table XXVIII	0	+3	-1	.	.	.	.	.	.
Table XXIX	+3	.	.	.	.	.	.	.	.
Sum	+809	-949	+1334	+245	-192	+34	-23	+3	-6

Uranus—Heliocentric Place—Continued.

[1854, December 5. Greenwich mean noon.]

	(<i>b. c. 0</i>)	(<i>b. s. 1</i>)	(<i>b. c. 1</i>)	(<i>b. s. 2</i>)	(<i>b. c. 2</i>)	(<i>b. s. 3</i>)	(<i>b. c. 3</i>)
Table XXXI	−0.07	−0.20	−0.75	+0.11	−0.16	+0.04	0.00
Table XXXII	+0.12	+3.33	+1.85	−0.08	−0.01	−0.03	+0.05
Table XXXIII	+0.05	+0.39	−0.51	+0.13	−0.06	0.00	+0.01
Sum	+0.10	+3.52	+0.59	+0.16	−0.23	+0.01	+0.06

<i>Longitude.</i>		<i>Log Radius Vector.</i>		<i>Latitude.</i>	
<i>l</i>	° ' "	Table XXX, log <i>r</i>	1.293 530 0	Log sin <i>i</i>	= 8.129 707
E	49 36 25.25	(<i>ρ. c. 0</i>)	+	Log sin <i>u</i>	= 9.675 612 <i>n</i>
(<i>v. c. 0</i>)	− 4 35 17.81	(<i>ρ. s. 1</i>) sin <i>g</i>	+	Log sin <i>β</i> ₀	= 7.805 319 <i>n</i>
(<i>v. s. 1</i>) sin <i>g</i>	+ 2 55.05	(<i>ρ. c. 1</i>) cos <i>g</i>	−		
(<i>v. c. 1</i>) cos <i>g</i>	+ 25.58	(<i>ρ. s. 2</i>) sin 2 <i>g</i>	+	<i>β</i> ₀	° ' "
(<i>v. s. 2</i>) sin 2 <i>g</i>	− 1.82	(<i>ρ. c. 2</i>) cos 2 <i>g</i>	+	(<i>b. c. 0</i>)	+ 0 21 57.49
(<i>v. c. 2</i>) cos 2 <i>g</i>	+ 0.91	(<i>ρ. s. 3</i>) sin 3 <i>g</i>	+	(<i>b. s. 1</i>) sin <i>g</i>	− 3.08
(<i>v. s. 3</i>) sin 3 <i>g</i>	− 1.55	(<i>ρ. c. 3</i>) cos 3 <i>g</i>	−	(<i>b. c. 1</i>) cos <i>g</i>	− 0.28
(<i>v. c. 3</i>) cos 3 <i>g</i>	+ 0.48	(<i>ρ. s. 4</i>) sin 4 <i>g</i>	−	(<i>b. s. 2</i>) sin 2 <i>g</i>	+ 0.14
(<i>v. s. 4</i>) sin 4	+ 5.75	(<i>ρ. c. 4</i>) cos 4 <i>g</i>	+	(<i>b. c. 2</i>) cos 2 <i>g</i>	+ 0.12
(<i>v. c. 4</i>) cos 4 <i>g</i>	− 0.24			(<i>b. s. 3</i>) sin 3 <i>g</i>	0.00
(<i>v. s. 5</i>) sin 5 <i>g</i>	− 0.11			(<i>b. c. 3</i>) cos 3 <i>g</i>	+ 0.06
(<i>v. c. 5</i>) cos 5 <i>g</i>	+ 0.03				
	− 0.01	Log <i>r</i>	1.293 658 7		
Longitude in orbit	44 58 41.41			Latitude	− 0° 22' 0''.43
<i>θ</i>	73 15 38.3				
<i>u</i>	331 43 3.1				
R. Table XXI	+ 7.82				
Longitude, Mean Eq.	44 58 49.23				

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TABLES OF URANUS.

TABLE I.—*Epochs and Arguments for every fourth year, 1600 to 2000.*

Year.	<i>l</i>			<i>g</i>		θ			<i>I</i>	<i>2</i>	<i>3</i>
	°	'	"	°	'	°	'	"			
1600	33	42	8.46	228	50.465	71	57	40.5	204.84	400.93	420.00
04	50	53	53.83	245	58.871	71	58	53.9	218.84	453.84	593.76
08	68	5	39.21	263	7.277	72	0	7.3	232.85	506.75	167.52
12	85	17	24.59	280	15.684		1	20.7	246.85	559.66	341.28
16	102	29	9.97	297	24.090		2	34.1	260.85	12.56	515.04
1620	119	40	55.34	314	32.496	72	3	47.5	274.85	65.47	88.80
24	136	52	40.72	331	40.902		5	0.9	288.85	118.38	262.56
28	154	4	26.10	348	49.308		6	14.2	302.86	171.29	436.32
32	171	16	11.48	5	57.714		7	27.6	316.86	224.20	10.08
36	188	27	56.85	23	6.121		8	41.0	330.86	277.10	183.84
1640	205	39	42.23	40	14.527	72	9	54.4	344.86	330.01	357.60
44	222	51	27.61	57	22.933		11	7.8	358.86	382.92	531.36
48	240	3	12.99	74	31.339		12	21.2	372.87	435.83	105.12
52	257	14	58.36	91	39.745		13	34.6	386.87	488.73	278.88
56	274	26	43.74	108	48.152		14	48.0	400.87	541.64	452.64
1660	291	38	29.12	125	56.558	72	16	1.4	414.87	594.55	26.40
64	308	50	14.50	143	4.964		17	14.8	428.87	47.46	200.16
68	326	1	59.87	160	13.370		18	28.2	442.88	100.36	373.92
72	343	13	45.25	177	21.776		19	41.6	456.88	153.27	547.68
76	0	25	30.63	194	30.183		20	54.9	470.88	206.18	121.45
1680	17	37	16.01	211	38.589	72	22	8.3	484.88	259.09	295.21
84	34	49	1.39	228	46.995		23	21.7	498.88	312.00	468.97
88	52	0	46.76	245	55.401		24	35.1	512.89	364.90	42.73
92	69	12	32.14	263	3.807		25	48.5	526.89	417.81	216.49
96	86	24	17.52	280	12.214		27	1.9	540.89	470.72	390.25
1700	103	35	20.52	297	19.916	72	28	15.3	554.89	523.59	563.89
04	120	47	5.90	314	28.322		29	28.7	568.89	576.50	137.65
08	137	58	51.28	331	36.728		30	42.1	582.89	29.40	311.41
12	155	10	36.66	348	45.134		31	55.5	596.89	82.31	485.17
16	172	22	22.03	5	53.541		33	8.9	10.89	135.22	58.93
1720	189	34	7.41	23	1.947	72	34	22.3	24.89	188.13	232.69
24	206	45	52.79	40	10.353		35	35.7	38.90	241.04	406.45
28	223	57	38.17	57	18.759		36	49.0	52.90	293.94	580.21
32	241	9	23.54	74	27.165		38	2.4	66.90	346.85	153.97
36	258	21	8.92	91	35.572		39	15.8	80.90	399.76	327.73
1740	275	32	54.30	108	43.978	72	40	29.2	94.90	452.67	501.49
44	292	44	39.68	125	52.384		41	42.6	108.91	505.57	75.25
48	309	56	25.05	143	0.790		42	56.0	122.91	558.48	249.01
52	327	8	10.43	160	9.196		44	9.4	136.91	11.39	422.77
56	344	19	55.81	177	17.602		45	22.8	150.91	64.30	596.54
1760	1	31	41.19	194	26.009	72	46	36.2	164.91	117.20	170.30
64	18	43	26.57	211	34.415		47	49.6	178.92	170.11	344.06
68	35	55	11.94	228	42.821		49	3.0	192.92	223.02	517.82
72	53	6	57.32	245	51.227		50	16.4	206.92	275.93	91.58
76	70	18	42.70	262	59.633		51	29.7	220.92	328.84	255.34
1780	87	30	28.08	280	8.040	72	52	43.1	234.92	381.74	439.10
84	104	42	13.45	297	16.446		53	56.5	248.93	434.65	12.86
88	121	53	58.83	314	24.852		55	9.9	262.93	487.56	186.62
92	139	5	44.21	331	33.258		56	23.3	276.93	540.47	360.38
96	156	17	29.59	348	41.664		57	36.7	290.93	593.37	534.14
1800	173	28	32.59	5	49.367	72	58	50.1	304.93	46.24	107.78

TABLE I.—*Epochs and Arguments for every fourth year, 1600 to 2000.*

Year.	4	5	6	7	8	9	10	11	12	13	14
1600	19.343	362.248	6	40	5.50	56.5	58.4	51	33.0	54.8	51.1
04	43.684	366.473	23	55	6.58	57.8	2.1	59	50.6	0.0	8.2
08	68.025	370.699	40	10	7.66	59.2	5.9	6	8.3	5.1	25.3
12	92.366	374.924	57	25	8.74	0.5	9.7	14	25.9	10.2	42.4
16	116.708	379.149	14	40	9.82	1.9	13.5	21	43.5	15.4	59.5
1620	141.049	383.375	31	55	10.90	3.2	17.3	29	1.2	20.5	16.6
24	165.390	387.600	48	10	11.98	4.6	21.1	36	18.8	25.7	33.7
28	189.731	391.826	5	25	13.06	5.9	24.9	43	36.5	30.8	50.8
32	214.072	396.051	22	40	14.14	7.3	28.7	51	54.1	35.9	7.9
36	238.413	400.276	38	55	15.23	8.6	32.4	58	11.8	41.1	25.0
1640	262.755	404.502	55	10	16.31	10.0	36.2	6	29.4	46.2	42.1
44	287.096	408.727	12	25	17.39	11.3	40.0	13	47.1	51.4	59.2
48	311.437	412.952	29	40	18.47	12.7	43.8	21	4.7	56.5	16.3
52	335.778	417.178	46	54	19.55	14.0	47.6	28	22.4	1.6	33.4
56	360.119	421.403	3	9	20.63	15.4	51.4	36	40.0	6.8	50.5
1660	384.460	425.628	20	24	21.71	16.7	55.2	43	57.7	11.9	7.6
64	408.802	429.854	37	39	22.79	18.1	59.0	51	15.3	17.0	24.7
68	433.143	434.079	54	54	23.88	19.4	2.7	58	33.0	22.2	41.8
72	457.484	438.304	11	9	24.96	20.8	6.5	5	50.6	27.3	58.9
76	481.825	442.530	28	24	26.04	22.2	10.3	13	8.3	32.5	16.0
1680	506.166	446.755	45	39	27.12	23.5	14.1	20	25.9	37.6	33.1
84	530.507	450.981	2	54	28.20	24.9	17.9	28	43.6	42.8	50.2
88	554.849	455.206	19	9	29.28	26.2	21.7	35	1.2	47.9	7.4
92	579.190	459.431	36	24	30.36	27.6	25.5	43	18.9	53.0	24.5
96	3.531	463.657	53	39	31.44	28.9	29.3	50	36.5	58.2	41.6
1700	27.855	467.879	10	54	32.52	30.3	33.0	58	54.1	3.3	58.7
04	52.196	472.104	27	9	33.61	31.6	36.8	5	11.8	8.4	15.8
08	76.538	476.330	44	24	34.69	33.0	40.6	13	29.4	13.6	32.9
12	100.879	480.555	1	39	35.77	34.3	44.4	20	47.1	18.7	50.0
16	125.220	484.781	18	53	36.85	35.7	48.2	27	4.7	23.9	7.1
1720	149.561	489.006	34	8	37.93	37.0	52.0	35	22.4	29.0	24.2
24	173.902	493.231	51	23	39.01	38.4	55.8	42	40.0	34.1	41.3
28	198.243	497.457	8	38	40.09	39.7	59.6	50	57.7	39.3	58.4
32	222.585	501.682	25	53	41.17	41.1	3.3	57	15.3	44.4	15.5
36	246.926	505.907	42	8	42.25	42.4	7.1	5	33.0	49.6	32.6
1740	271.267	510.133	59	23	43.34	43.8	10.9	12	50.6	54.7	49.7
44	295.608	514.358	16	38	44.42	45.2	14.7	20	8.3	59.8	6.8
48	319.949	518.583	33	53	45.50	46.5	18.5	27	25.9	5.0	23.9
52	344.290	522.809	50	8	46.58	47.9	22.3	34	43.6	10.1	41.0
56	368.632	527.034	7	23	47.66	49.2	26.1	42	1.2	15.3	58.1
1760	392.973	531.260	24	38	48.74	50.6	29.8	49	18.8	20.4	15.2
64	417.314	535.485	41	53	49.82	51.9	33.6	57	36.5	25.5	32.3
68	441.655	539.710	58	8	50.90	53.3	37.4	4	54.1	30.7	49.4
72	465.996	543.936	15	23	51.99	54.6	41.2	12	11.8	35.8	6.5
76	490.337	548.161	32	38	53.07	56.0	45.0	19	29.4	41.0	23.6
1780	514.679	552.386	49	53	54.15	57.3	48.8	27	47.1	46.1	40.7
84	539.020	556.612	6	7	55.23	58.7	52.6	34	4.7	51.2	57.8
88	563.361	560.837	23	22	56.31	0.0	56.4	42	22.4	56.4	15.0
92	587.702	565.062	40	37	57.39	1.4	0.1	49	40.0	1.5	32.1
96	12.043	569.288	57	52	58.47	2.7	3.9	56	57.7	6.7	49.2
1800	36.368	573.510	14	7	59.55	4.1	7.7	4	15.3	11.8	6.3

TABLES OF URANUS.

TABLE I.—*Epochs and Arguments for every fourth year, 1600 to 2000.*

Year.	<i>l</i>			<i>g</i>			<i>θ</i>			<i>l</i>	<i>2</i>	<i>3</i>
	°	'	"	°	'	"	°	'	"			
1800	173	28	32.59	5	49.367		72	58	50.1	304.93	46.24	107.78
04	190	40	17.97	22	57.773		73	0	3.5	318.93	99.15	281.54
08	207	52	3.35	40	6.179			1	16.9	332.93	152.06	455.30
12	225	3	48.72	57	14.585			2	30.3	346.93	204.97	29.06
16	242	15	34.10	74	22.991			3	43.7	360.93	257.88	202.82
1820	259	27	19.48	91	31.398		73	4	57.1	374.94	310.78	376.58
24	276	39	4.86	108	39.804			6	10.5	388.94	363.69	550.34
28	293	50	50.24	125	48.210			7	23.8	402.94	416.60	124.10
32	311	2	35.61	142	56.616			8	37.2	416.94	469.51	297.86
36	328	14	20.99	160	5.022			9	50.6	430.94	522.41	471.62
1840	345	26	6.37	177	13.429		73	11	4.0	444.95	575.32	45.39
44	2	37	51.75	194	21.835			12	17.4	458.95	28.23	219.15
48	19	49	37.12	211	30.241			13	30.8	472.95	81.14	392.91
52	37	1	22.50	228	38.647			14	44.2	486.95	134.05	566.67
56	54	13	7.88	245	47.053			15	57.6	500.95	186.95	140.43
1860	71	24	53.26	262	55.460		73	17	11.0	514.96	239.86	314.19
64	88	36	38.63	280	3.866			18	24.4	528.96	292.77	487.95
68	105	48	24.01	297	12.272			19	37.8	542.96	345.68	61.71
72	123	0	9.39	314	20.678			20	51.2	556.96	398.58	235.47
76	140	11	54.77	331	29.084			22	4.5	570.96	451.49	409.23
1880	157	23	40.14	348	37.490		73	23	17.9	584.97	504.40	582.99
84	174	35	25.52	5	45.897			24	31.3	598.97	557.31	156.75
88	191	47	10.90	22	54.303			25	44.7	12.97	10.21	330.51
92	208	58	56.28	40	2.709			26	58.1	26.97	63.12	504.27
96	226	10	41.65	57	11.115			28	11.5	40.97	116.03	78.03
1900	243	21	44.66	74	18.818		73	29	24.9	54.97	168.90	251.67
04	260	33	30.04	91	27.224			30	38.3	68.97	221.81	425.43
08	277	45	15.42	108	35.630			31	51.7	82.97	274.72	599.19
12	294	57	0.79	125	44.036			33	5.1	96.97	327.62	172.95
16	312	8	46.17	142	52.442			34	18.5	110.98	380.53	346.71
1920	329	20	31.55	160	0.848		73	35	31.9	124.98	433.44	520.48
24	346	32	16.93	177	9.255			36	45.3	138.98	486.35	94.24
28	3	44	2.30	194	17.661			37	58.6	152.98	539.25	268.00
32	20	55	47.68	211	26.067			39	12.0	166.98	592.16	441.76
36	38	7	33.06	228	34.473			40	25.4	180.99	45.07	15.52
1940	55	19	18.44	245	42.879		73	41	38.8	194.99	97.98	189.28
44	72	31	3.81	262	51.286			42	52.2	208.99	150.89	363.04
48	89	42	49.19	279	59.692			44	5.6	222.99	203.79	536.80
52	106	54	34.57	297	8.098			45	19.0	237.00	256.70	110.56
56	124	6	19.95	314	16.504			46	32.4	251.00	309.61	284.32
1960	141	18	5.32	331	24.910		73	47	45.8	265.00	362.52	458.08
64	158	29	50.70	348	33.317			48	59.2	279.00	415.42	31.84
68	175	41	36.08	5	41.723			50	12.6	293.00	468.33	205.60
72	192	53	21.46	22	50.129			51	26.0	307.01	521.24	379.36
76	210	5	6.83	39	58.535			52	39.3	321.01	574.15	553.12
1980	227	16	52.21	57	6.941		73	53	52.7	335.01	27.05	126.88
84	244	28	37.59	74	15.347			55	6.1	349.01	79.96	300.64
88	261	40	22.97	91	23.754			56	19.5	363.01	132.87	474.40
92	278	52	8.34	108	32.160			57	32.9	377.02	185.78	48.16
96	296	3	53.72	125	40.566			58	46.3	391.02	238.69	221.92
2000	313	15	39.10	142	48.972		73	59	59.7	405.02	291.59	395.68

TABLE I.—*Epochs and Arguments for every fourth year, 1600 to 2000.*

Year.	4	5	6	7	8	9	10	11	12	13	14
1800	36. 368	573. 510	14	7	59. 55	4. 1	7. 7	4	15. 3	11. 8	6. 3
04	60. 709	577. 736	30	22	0. 64	5. 4	11. 5	11	33. 0	16. 9	23. 4
08	85. 050	581. 961	47	37	1. 72	6. 8	15. 3	19	50. 6	22. 1	40. 5
12	109. 391	586. 186	4	52	2. 80	8. 1	19. 1	26	8. 3	27. 2	57. 6
16	133. 732	590. 411	21	7	3. 88	9. 5	22. 9	34	25. 9	32. 4	14. 7
1820	158. 073	594. 637	38	22	4. 96	10. 9	26. 6	41	43. 6	37. 5	31. 8
24	182. 415	598. 862	45	37	6. 04	12. 2	30. 4	49	1. 2	42. 6	48. 9
28	206. 756	3. 088	12	52	7. 12	13. 6	34. 2	56	18. 8	47. 8	6. 0
32	231. 097	7. 313	29	7	8. 20	14. 9	38. 0	3	36. 5	52. 9	23. 1
36	255. 438	11. 538	46	22	9. 28	16. 3	41. 8	11	54. 1	58. 1	40. 2
1840	279. 779	15. 764	3	37	10. 37	17. 6	45. 6	18	11. 8	3. 2	57. 3
44	304. 120	19. 989	20	52	11. 45	19. 0	49. 4	26	29. 4	8. 3	14. 4
48	328. 462	24. 214	37	6	12. 53	20. 3	53. 2	33	47. 1	13. 5	31. 5
52	352. 803	28. 440	54	21	13. 61	21. 7	56. 9	41	4. 7	18. 6	48. 6
56	377. 144	32. 665	11	36	14. 69	23. 0	0. 7	48	22. 4	23. 8	5. 7
1860	401. 485	36. 890	28	51	15. 77	24. 4	4. 5	56	40. 0	28. 9	22. 8
64	425. 826	41. 116	45	6	16. 85	25. 7	8. 3	3	57. 7	34. 0	39. 9
68	450. 167	45. 341	2	21	17. 93	27. 1	12. 1	10	15. 3	39. 2	57. 0
72	474. 509	49. 566	19	36	19. 02	28. 4	15. 9	18	33. 0	44. 3	14. 1
76	498. 850	53. 792	35	51	20. 10	29. 8	19. 7	25	50. 6	49. 5	31. 2
1880	523. 191	58. 017	53	6	21. 18	31. 1	23. 5	33	8. 3	54. 6	48. 3
84	547. 532	62. 243	9	21	22. 26	32. 5	27. 2	40	25. 9	59. 7	5. 4
88	571. 873	66. 468	26	36	23. 34	33. 9	31. 0	48	43. 6	4. 9	22. 5
92	596. 214	70. 693	43	51	24. 42	35. 2	34. 8	55	1. 2	10. 0	39. 7
96	20. 555	74. 919	0	6	25. 50	36. 6	38. 6	3	18. 9	15. 2	56. 8
1900	44. 880	79. 141	17	21	26. 58	37. 9	42. 4	10	36. 5	20. 3	13. 9
04	69. 221	83. 366	34	36	27. 66	39. 3	46. 2	18	54. 1	25. 4	31. 0
08	93. 562	87. 592	51	51	28. 75	40. 6	50. 0	25	11. 8	30. 6	48. 1
12	117. 903	91. 817	8	6	29. 83	42. 0	53. 8	32	29. 4	35. 7	5. 2
16	142. 245	96. 042	25	20	30. 91	43. 3	57. 5	40	47. 1	40. 9	22. 3
1920	166. 586	100. 268	42	35	31. 99	44. 7	1. 3	47	4. 7	46. 0	39. 4
24	190. 927	104. 493	59	50	33. 07	46. 0	5. 1	55	22. 4	51. 1	56. 5
28	215. 268	108. 719	16	5	34. 15	47. 4	8. 9	2	40. 0	56. 3	13. 6
32	239. 609	112. 944	33	20	35. 23	48. 7	12. 7	10	57. 7	1. 4	30. 7
36	263. 950	117. 169	50	35	36. 31	50. 1	16. 5	17	15. 3	6. 6	47. 8
1940	288. 292	121. 395	7	50	37. 40	51. 4	20. 3	25	33. 0	11. 7	4. 9
44	312. 633	125. 620	24	5	38. 48	52. 8	24. 0	32	50. 6	16. 8	22. 0
48	336. 974	129. 845	41	20	39. 56	54. 1	27. 8	40	8. 3	22. 0	39. 1
52	361. 315	134. 071	58	35	40. 64	55. 5	31. 6	47	25. 9	27. 1	56. 2
56	385. 656	138. 296	15	50	41. 72	56. 8	35. 4	54	43. 6	32. 3	13. 3
1960	409. 997	142. 521	32	5	42. 80	58. 2	39. 2	2	1. 2	37. 4	30. 4
64	434. 339	146. 747	49	20	43. 88	59. 6	43. 0	9	18. 9	42. 5	47. 5
68	458. 680	150. 972	5	35	44. 96	0. 9	46. 8	17	36. 5	47. 7	4. 6
72	483. 021	155. 197	22	50	46. 04	2. 3	50. 6	24	54. 1	52. 8	21. 7
76	507. 362	159. 423	39	5	47. 13	3. 6	54. 3	32	11. 8	58. 0	38. 8
1980	531. 703	163. 648	56	20	48. 21	5. 0	58. 1	39	29. 4	3. 1	55. 9
84	556. 044	167. 874	13	34	49. 29	6. 3	1. 9	47	47. 1	8. 2	13. 0
88	580. 386	172. 099	30	49	50. 37	7. 7	5. 7	54	4. 7	13. 4	30. 1
92	4. 727	176. 324	47	4	51. 45	9. 0	9. 5	1	22. 4	18. 5	47. 3
96	29. 068	180. 550	4	19	52. 53	10. 4	13. 3	9	40. 0	23. 7	4. 4
2000	53. 409	184. 775	21	34	53. 61	11. 7	17. 1	16	57. 7	28. 8	21. 5

TABLE II.—*Reduction to beginning of months in the four-year cycle.*

		<i>l</i>			<i>g</i>		θ			<i>l</i>	<i>2</i>	<i>3</i>	<i>4</i>
Year 0:		°	'	"	°	'	°	'	"				
January	1 *	0	0	0.00	0	0.000	0	0	0.0	0.00	0.00	0.00	0.000
February	0 *	0	21	11.16	0	21.117			1.5	0.29	1.09	3.57	0.500
March	0	0	41	39.94	0	41.530			3.0	0.57	2.14	7.02	0.983
April	0	1	3	33.47	1	3.352			4.5	0.86	3.26	10.70	1.499
May	0	1	24	44.63	1	24.469			6.0	1.15	4.35	14.27	1.999
June	0	1	46	38.16	1	46.290			7.6	1.45	5.47	17.96	2.516
July	0	2	7	49.32	2	7.407			9.1	1.73	6.55	21.53	3.016
August	0	2	29	42.85	2	29.228			10.6	2.03	7.68	25.21	3.532
September	0	2	51	36.38	2	51.049			12.2	2.33	8.80	28.90	4.049
October	0	3	12	47.53	3	12.166			13.7	2.62	9.89	32.47	4.548
November	0	3	34	41.06	3	33.987			15.3	2.91	11.01	36.16	5.065
December	0	3	55	52.22	3	55.104			16.8	3.20	12.10	39.72	5.565
Year 1:													
January	0	4	17	45.75	4	16.926			18.3	3.50	13.22	43.41	6.081
February	0	4	39	39.28	4	38.747			19.9	3.80	14.34	47.10	6.598
March	0	4	59	25.69	4	58.456			21.3	4.06	15.35	50.43	7.064
April	0	5	21	19.22	5	20.277			22.9	4.36	16.48	54.11	7.581
May	0	5	42	30.38	5	41.394			24.4	4.65	17.56	57.68	8.080
June	0	6	4	23.91	6	3.215			25.9	4.95	18.69	61.37	8.597
July	0	6	25	35.07	6	24.332			27.4	5.23	19.77	64.94	9.097
August	0	6	47	28.60	6	46.154			29.0	5.53	20.90	68.62	9.613
September	0	7	9	22.13	7	7.975			30.5	5.83	22.02	72.31	10.130
October	0	7	30	33.29	7	29.092			32.0	6.11	23.10	75.88	10.629
November	0	7	52	26.82	7	50.913			33.6	6.41	24.23	79.57	11.146
December	0	8	13	37.97	8	12.030			35.1	6.70	25.31	83.13	11.646
Year 2:													
January	0	8	35	31.50	8	33.851			36.7	7.00	26.44	86.82	12.162
February	0	8	57	25.03	8	55.672			38.2	7.29	27.56	90.51	12.679
March	0	9	17	11.45	9	15.382			39.6	7.56	28.57	93.84	13.145
April	0	9	39	4.98	9	37.203			41.2	7.86	29.69	97.52	13.662
May	0	10	0	16.13	9	58.320			42.7	8.15	30.78	101.09	14.162
June	0	10	22	9.66	10	20.141			44.3	8.44	31.90	104.78	14.678
July	0	10	43	20.82	10	41.258			45.8	8.73	32.99	108.35	15.178
August	0	11	5	14.35	11	3.079			47.3	9.03	34.11	112.03	15.694
September	0	11	27	7.88	11	24.900			48.9	9.33	35.24	115.72	16.211
October	0	11	48	19.04	11	46.017			50.4	9.61	36.32	119.29	16.711
November	0	12	10	12.57	12	7.838			51.9	9.91	37.44	122.98	17.227
December	0	12	31	23.72	12	28.956			53.4	10.20	38.53	126.54	17.727
Year 3:													
January	0	12	53	17.25	12	50.777			55.0	10.49	39.65	130.23	18.243
February	0	13	15	10.78	13	12.598			56.6	10.79	40.78	133.92	18.760
March	0	13	34	57.20	13	32.307			58.0	11.06	41.79	137.25	19.226
April	0	13	56	50.73	13	54.128	0	0	59.5	11.36	42.91	140.93	19.743
May	0	14	18	1.88	14	15.245	0	1	1.0	11.64	44.00	144.50	20.243
June	0	14	39	55.41	14	37.066			2.6	11.94	45.12	148.19	20.759
July	0	15	1	6.57	14	58.184			4.1	12.23	46.21	151.76	21.259
August	0	15	23	0.10	15	20.005			5.7	12.53	47.33	155.44	21.775
September	0	15	44	53.63	15	41.826			7.2	12.82	48.45	159.13	22.292
October	0	16	6	4.79	16	2.943			8.7	13.11	49.54	162.70	22.792
November	0	16	27	58.32	16	24.764			10.3	13.41	50.66	166.39	23.308
December	0	16	49	9.48	16	45.881	0	1	11.8	13.70	51.75	169.95	23.808

* The first two dates under Year 0 should, in the years 1700, 1800, and 1900, be regarded as January 0 and February -1.

TABLE II.—*Reduction to beginning of months in the four-year cycle.*

		5	6	7	8	9	10	11	12	13	14
Year 0:											
January	1*	0.000	0	0	0.00	0.0	0.0	0	0.0	0.0	0.0
February	0*	0.087	0	0	0.02	0.0	0.1	0	0.4	0.1	0.4
March	0	0.171	1	1	0.04	0.1	0.2	0	0.7	0.2	0.7
April	0	0.260	1	1	0.07	0.1	0.2	0	1.1	0.3	1.1
May	0	0.347	1	1	0.09	0.1	0.3	1	1.4	0.4	1.4
June	0	0.437	2	2	0.11	0.1	0.4	1	1.8	0.5	1.8
July	0	0.523	2	2	0.13	0.2	0.5	1	2.2	0.6	2.1
August	0	0.613	2	2	0.16	0.2	0.5	1	2.6	0.7	2.5
September	0	0.703	3	2	0.18	0.2	0.6	1	2.9	0.9	2.8
October	0	0.790	3	3	0.20	0.3	0.7	1	3.3	1.0	3.2
November	0	0.879	4	3	0.22	0.3	0.8	2	3.7	1.1	3.6
December	0	0.966	4	3	0.25	0.3	0.9	2	4.0	1.2	3.9
Year 1:											
January	0	1.056	4	4	0.27	0.3	0.9	2	4.4	1.3	4.3
February	0	1.145	5	4	0.29	0.4	1.0	2	4.8	1.4	4.6
March	0	1.226	5	4	0.31	0.4	1.1	2	5.1	1.5	5.0
April	0	1.316	5	5	0.34	0.4	1.2	2	5.5	1.6	5.3
May	0	1.403	6	5	0.36	0.4	1.3	2	5.9	1.7	5.7
June	0	1.492	6	5	0.38	0.5	1.3	3	6.2	1.8	6.0
July	0	1.579	6	6	0.40	0.5	1.4	3	6.6	1.9	6.4
August	0	1.669	7	6	0.43	0.5	1.5	3	7.0	2.0	6.8
September	0	1.758	7	6	0.45	0.6	1.6	3	7.3	2.1	7.1
October	0	1.845	7	7	0.47	0.6	1.7	3	7.7	2.2	7.5
November	0	1.935	8	7	0.50	0.6	1.7	3	8.1	2.4	7.8
December	0	2.022	8	7	0.52	0.6	1.8	4	8.4	2.5	8.2
Year 2:											
January	0	2.111	8	7	0.54	0.7	1.9	4	8.8	2.6	8.5
February	0	2.201	9	8	0.56	0.7	2.0	4	9.2	2.7	8.9
March	0	2.282	9	8	0.58	0.7	2.0	4	9.5	2.8	9.2
April	0	2.372	10	8	0.61	0.8	2.1	4	9.9	2.9	9.6
May	0	2.458	10	9	0.63	0.8	2.2	4	10.3	3.0	10.0
June	0	2.548	10	9	0.65	0.8	2.3	4	10.6	3.1	10.3
July	0	2.635	11	9	0.67	0.8	2.4	5	11.0	3.2	10.7
August	0	2.724	11	10	0.70	0.9	2.4	5	11.4	3.3	11.0
September	0	2.814	11	10	0.72	0.9	2.5	5	11.8	3.4	11.4
October	0	2.901	12	10	0.74	0.9	2.6	5	12.1	3.5	11.7
November	0	2.990	12	11	0.77	1.0	2.7	5	12.5	3.6	12.1
December	0	3.077	12	11	0.79	1.0	2.8	5	12.9	3.7	12.5
Year 3:											
January	0	3.167	13	11	0.81	1.0	2.8	6	13.2	3.9	12.8
February	0	3.257	13	11	0.83	1.0	2.9	6	13.6	4.0	13.2
March	0	3.337	13	12	0.85	1.1	3.0	6	13.9	4.1	13.5
April	0	3.427	14	12	0.88	1.1	3.1	6	14.3	4.2	13.9
May	0	3.514	14	12	0.90	1.1	3.1	6	14.7	4.3	14.2
June	0	3.604	14	13	0.92	1.2	3.2	6	15.1	4.4	14.6
July	0	3.690	15	13	0.94	1.2	3.3	6	15.4	4.5	14.9
August	0	3.780	15	13	0.97	1.2	3.4	7	15.8	4.6	15.3
September	0	3.870	16	14	0.99	1.2	3.5	7	16.2	4.7	15.7
October	0	3.956	16	14	1.01	1.3	3.5	7	16.5	4.8	16.0
November	0	4.046	16	14	1.04	1.3	3.6	7	16.9	4.9	16.4
December	0	4.133	17	15	1.06	1.3	3.7	7	17.3	5.0	16.7

* The first two dates under Year 0 should, in the years 1700, 1800, and 1900, be regarded as January 0 and February -1.

TABLE III.—*Motion of Arguments, etc., for days.*

Days.	<i>l</i>		<i>g</i>	θ	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
	<i>'</i>	<i>''</i>	<i>'</i>	<i>''</i>				
1	0	42.37	0.704	0.1	0.01	0.04	0.12	0.017
2	1	24.74	1.408	0.1	0.02	0.07	0.24	0.033
3	2	7.12	2.112	0.2	0.03	0.11	0.36	0.050
4	2	49.49	2.816	0.2	0.04	0.14	0.48	0.067
5	3	31.86	3.520	0.3	0.05	0.18	0.59	0.083
6	4	14.23	4.223	0.3	0.05	0.22	0.71	0.100
7	4	56.60	4.927	0.4	0.07	0.25	0.83	0.117
8	5	38.98	5.631	0.4	0.08	0.29	0.95	0.133
9	6	21.35	6.335	0.5	0.09	0.33	1.07	0.150
10	7	3.72	7.039	0.5	0.10	0.36	1.19	0.167
11	7	46.09	7.743	0.6	0.11	0.40	1.31	0.183
12	8	28.46	8.447	0.6	0.12	0.43	1.43	0.200
13	9	10.84	9.151	0.7	0.12	0.47	1.55	0.217
14	9	53.21	9.855	0.7	0.13	0.51	1.67	0.233
15	10	35.58	10.559	0.8	0.14	0.54	1.78	0.250
16	11	17.95	11.262	0.8	0.15	0.58	1.90	0.267
17	12	0.32	11.966	0.9	0.16	0.62	2.02	0.283
18	12	42.70	12.670	0.9	0.17	0.65	2.14	0.300
19	13	25.07	13.374	1.0	0.18	0.69	2.26	0.317
20	14	7.44	14.078	1.0	0.19	0.72	2.38	0.333
21	14	49.81	14.782	1.1	0.20	0.76	2.50	0.350
22	15	32.18	15.486	1.1	0.21	0.80	2.62	0.367
23	16	14.56	16.190	1.2	0.22	0.83	2.74	0.383
24	16	56.93	16.894	1.2	0.23	0.87	2.85	0.400
25	17	39.30	17.598	1.3	0.24	0.91	2.97	0.417
26	18	21.67	18.301	1.3	0.25	0.94	3.09	0.433
27	19	4.04	19.005	1.4	0.26	0.98	3.21	0.450
28	19	46.42	19.709	1.4	0.27	1.01	3.33	0.466
29	20	28.79	20.413	1.5	0.28	1.05	3.45	0.483
30	21	11.16	21.117	1.5	0.29	1.09	3.57	0.500
31	21	53.53	21.821	1.6	0.30	1.12	3.69	0.516

Days.	5	6	7	8	9	10	11	12	13	14
1	0.003	0	0	0.00	0.0	0.0	0	0.0	0.0	0.0
2	0.006	0	0	0.00	0.0	0.0	0	0.0	0.0	0.0
3	0.009	0	0	0.00	0.0	0.0	0	0.0	0.0	0.0
4	0.012	0	0	0.00	0.0	0.0	0	0.0	0.0	0.0
5	0.014	0	0	0.00	0.0	0.0	0	0.1	0.0	0.1
6	0.017	0	0	0.00	0.0	0.0	0	0.1	0.0	0.1
7	0.020	0	0	0.00	0.0	0.0	0	0.1	0.0	0.1
8	0.023	0	0	0.01	0.0	0.0	0	0.1	0.0	0.1
9	0.026	0	0	0.01	0.0	0.0	0	0.1	0.0	0.1
10	0.029	0	0	0.01	0.0	0.0	0	0.1	0.0	0.1
11	0.032	0	0	0.01	0.0	0.0	0	0.1	0.0	0.1
12	0.035	0	0	0.01	0.0	0.0	0	0.1	0.0	0.1
13	0.038	0	0	0.01	0.0	0.0	0	0.2	0.0	0.2
14	0.040	0	0	0.01	0.0	0.0	0	0.2	0.0	0.2
15	0.043	0	0	0.01	0.0	0.0	0	0.2	0.1	0.2
16	0.046	0	0	0.01	0.0	0.0	0	0.2	0.1	0.2
17	0.049	0	0	0.01	0.0	0.0	0	0.2	0.1	0.2
18	0.052	0	0	0.01	0.0	0.0	0	0.2	0.1	0.2
19	0.055	0	0	0.01	0.0	0.0	0	0.2	0.1	0.2
20	0.058	0	0	0.01	0.0	0.1	0	0.2	0.1	0.2
21	0.061	0	0	0.02	0.0	0.1	0	0.3	0.1	0.2
22	0.064	0	0	0.02	0.0	0.1	0	0.3	0.1	0.3
23	0.067	0	0	0.02	0.0	0.1	0	0.3	0.1	0.3
24	0.069	0	0	0.02	0.0	0.1	0	0.3	0.1	0.3
25	0.072	0	0	0.02	0.0	0.1	0	0.3	0.1	0.3
26	0.075	0	0	0.02	0.0	0.1	0	0.3	0.1	0.3
27	0.078	0	0	0.02	0.0	0.1	0	0.3	0.1	0.3
28	0.081	0	0	0.02	0.0	0.1	0	0.3	0.1	0.3
29	0.084	0	0	0.02	0.0	0.1	0	0.4	0.1	0.3
30	0.087	0	0	0.02	0.0	0.1	0	0.4	0.1	0.4
31	0.090	0	0	0.02	0.0	0.1	0	0.4	0.1	0.4

For a date in January of a leap year—that is, of all zero years of the four-year cycle except 1700, 1800, and 1900, Table III should be entered with a number 1 less than the day of the month.

In February, 1700, 1800, and 1900, Table III should be entered with a number 1 greater than the day of the month.

The period of arguments 1 to 5 is 600.

The period of arguments 6 to 14 is 60.

TABLE IV.—*Sum of secular terms and terms of long period.*

Year.	<i>l</i>	<i>g</i>	(<i>v. s. 1</i>)	(<i>v. c. 1</i>)	(<i>v. s. 2</i>)	(<i>v. c. 2</i>)	(<i>v. s. 3</i>)	(<i>v. c. 3</i>)	(<i>v. s. 4</i>)	(<i>v. c. 4</i>)	<i>0</i>
	"	"	"	"	"	"	"	"	"	"	"
1600	+319.02	+4.895	-337.07	+108.96	-19.76	+6.17	-1.18	+0.46	-0.07	+0.03	+13.6
02	314.80	4.831	334.93	108.74	19.64	6.16	1.18	0.46	0.07	0.03	13.4
04	310.61	4.767	332.79	108.52	19.51	6.15	1.17	0.46	0.07	0.03	13.3
06	306.44	4.704	330.65	108.28	19.39	6.14	1.16	0.45	0.07	0.03	13.1
08	302.30	4.641	328.50	108.04	19.27	6.12	1.15	0.45	0.07	0.03	13.0
1610	+298.19	+4.578	-326.36	+107.80	-19.15	+6.11	-1.14	+0.45	-0.07	+0.03	+12.8
12	294.11	4.516	324.21	107.55	19.02	6.10	1.14	0.45	0.07	0.03	12.7
14	290.05	4.454	322.06	107.29	18.90	6.08	1.13	0.45	0.07	0.03	12.5
16	286.02	4.393	319.91	107.03	18.78	6.07	1.12	0.45	0.07	0.03	12.4
18	282.02	4.332	317.75	106.76	18.65	6.06	1.11	0.44	0.06	0.03	12.2
1620	+278.05	+4.271	-315.60	+106.48	-18.53	+6.04	-1.10	+0.44	-0.06	+0.03	+12.1
22	274.10	4.211	313.44	106.20	18.40	6.03	1.10	0.44	0.06	0.03	12.0
24	270.18	4.152	311.28	105.91	18.28	6.01	1.09	0.44	0.06	0.03	11.8
26	266.29	4.092	309.11	105.62	18.15	6.00	1.08	0.44	0.06	0.03	11.7
28	262.42	4.033	306.95	105.32	18.03	5.98	1.07	0.43	0.06	0.03	11.5
1630	+258.59	+3.975	-304.78	+105.01	-17.90	+5.96	-1.07	+0.43	-0.06	+0.03	+11.4
32	254.79	3.917	302.61	104.70	17.78	5.95	1.06	0.43	0.06	0.03	11.2
34	251.01	3.859	300.44	104.38	17.65	5.93	1.05	0.43	0.06	0.03	11.1
36	247.26	3.802	298.27	104.05	17.53	5.92	1.04	0.43	0.06	0.03	11.0
38	243.53	3.745	296.09	103.72	17.40	5.90	1.03	0.42	0.06	0.03	10.8
40	+239.83	+3.689	-293.91	+103.39	-17.28	+5.88	-1.03	+0.42	-0.06	+0.02	+10.7
42	236.16	3.633	291.73	103.04	17.15	5.86	1.02	0.42	0.06	0.02	10.5
44	232.52	3.578	289.55	102.69	17.03	5.84	1.01	0.42	0.06	0.02	10.3
46	228.91	3.523	287.37	102.33	16.90	5.82	1.00	0.41	0.06	0.02	10.2
48	225.32	3.468	285.18	101.97	16.77	5.80	1.00	0.41	0.06	0.02	10.0
1650	+221.76	+3.414	-282.99	+101.60	-16.65	+5.78	-0.99	+0.41	-0.06	+0.02	+9.9
52	218.23	3.360	280.80	101.23	16.52	5.76	0.98	0.41	0.06	0.02	9.8
54	214.73	3.306	278.61	100.85	16.40	5.74	0.97	0.41	0.06	0.02	9.6
56	211.26	3.253	276.42	100.46	16.27	5.72	0.96	0.41	0.06	0.02	9.5
58	207.81	3.201	274.22	100.06	16.14	5.70	0.96	0.41	0.06	0.02	9.4
1660	+204.39	+3.149	-272.02	+99.66	-16.01	+5.68	-0.95	+0.40	-0.06	+0.02	+9.2
62	201.00	3.097	269.83	99.25	15.89	5.65	0.94	0.40	0.05	0.02	9.1
64	197.64	3.045	267.63	98.84	15.76	5.63	0.93	0.40	0.05	0.02	9.0
66	194.31	2.994	265.42	98.42	15.64	5.61	0.92	0.40	0.05	0.02	8.8
68	191.00	2.944	263.21	97.99	15.51	5.58	0.92	0.40	0.05	0.02	8.7
1670	+187.72	+2.894	-261.01	+97.55	-15.38	+5.56	-0.91	+0.40	-0.05	+0.02	+8.6
72	184.47	2.844	258.80	97.11	15.25	5.53	0.90	0.39	0.05	0.02	8.5
74	181.25	2.795	256.59	96.66	15.12	5.51	0.89	0.39	0.05	0.02	8.3
76	178.06	2.746	254.38	96.21	14.99	5.48	0.89	0.39	0.05	0.02	8.2
78	174.89	2.697	252.17	95.75	14.87	5.46	0.88	0.39	0.05	0.02	8.1
1680	+171.75	+2.649	-249.95	+95.28	-14.74	+5.43	-0.87	+0.39	-0.05	+0.02	+8.0
82	168.64	2.602	247.73	94.81	14.61	5.41	0.86	0.39	0.05	0.02	7.8
84	165.56	2.555	245.51	94.33	14.49	5.38	0.85	0.38	0.05	0.02	7.7
86	162.51	2.508	243.29	93.84	14.36	5.35	0.85	0.38	0.05	0.02	7.6
88	159.48	2.462	241.07	93.34	14.23	5.32	0.84	0.38	0.05	0.02	7.4
1690	+156.48	+2.416	-238.84	+92.84	-14.10	+5.30	-0.83	+0.38	-0.05	+0.02	+7.3
92	153.51	2.370	236.62	92.34	13.97	5.27	0.82	0.38	0.05	0.02	7.2
94	150.57	2.325	234.39	91.83	13.84	5.24	0.82	0.38	0.05	0.02	7.1
96	147.66	2.280	232.16	91.30	13.71	5.21	0.81	0.37	0.05	0.02	6.9
98	144.78	2.236	229.93	90.77	13.58	5.18	0.80	0.37	0.05	0.02	6.8
1700	+141.92	+2.192	-227.70	+90.23	-13.45	+5.15	-0.79	+0.37	-0.05	+0.02	+6.7

TABLE IV.—*Sum of secular terms and terms of long period.*

Year.	<i>l</i>	<i>g</i>	(<i>v. s. 1</i>)	(<i>v. c. 1</i>)	(<i>v. s. 2</i>)	(<i>v. c. 2</i>)	(<i>v. s. 3</i>)	(<i>v. c. 3</i>)	(<i>v. s. 4</i>)	(<i>v. c. 4</i>)	θ
	"	"	"	"	"	"	"	"	"	"	"
1700	+141.92	+2.192	-227.70	+90.23	-13.45	+5.15	-0.79	+0.37	-0.05	+0.02	+6.7
02	139.10	2.149	225.47	89.69	13.32	5.12	0.78	0.37	0.05	0.02	6.6
04	136.30	2.106	223.23	89.14	13.19	5.09	0.77	0.37	0.04	0.02	6.5
06	133.53	2.064	220.99	88.59	13.06	5.06	0.77	0.36	0.04	0.02	6.3
08	130.79	2.022	218.75	88.03	12.93	5.03	0.76	0.36	0.04	0.02	6.2
1710	+128.07	+1.980	-216.51	+87.46	-12.80	+5.00	-0.75	+0.36	-0.04	+0.02	+6.1
12	125.38	1.939	214.27	86.88	12.68	4.96	0.74	0.36	0.04	0.02	6.0
14	122.72	1.898	212.03	86.30	12.55	4.93	0.73	0.35	0.04	0.02	5.9
16	120.09	1.858	209.79	85.71	12.41	4.90	0.73	0.35	0.04	0.02	5.7
18	117.49	1.818	207.54	85.11	12.28	4.86	0.72	0.35	0.04	0.02	5.6
1720	+114.92	+1.778	-205.30	+84.51	-12.15	+4.83	-0.71	+0.35	-0.04	+0.02	+5.5
22	112.38	1.739	203.05	83.90	12.02	4.79	0.70	0.34	0.04	0.02	5.4
24	109.87	1.700	200.80	83.28	11.89	4.76	0.69	0.34	0.04	0.02	5.3
26	107.38	1.662	198.55	82.65	11.76	4.72	0.69	0.34	0.04	0.02	5.2
28	104.92	1.624	196.29	82.02	11.63	4.69	0.68	0.33	0.04	0.02	5.1
1730	+102.49	+1.587	-194.04	+81.38	-11.50	+4.65	-0.67	+0.33	-0.04	+0.02	+5.0
32	100.09	1.550	191.79	80.74	11.37	4.61	0.66	0.33	0.04	0.02	4.8
34	97.72	1.513	189.53	80.09	11.24	4.58	0.65	0.32	0.04	0.02	4.7
36	95.37	1.477	187.27	79.43	11.11	4.54	0.65	0.32	0.04	0.02	4.6
38	93.05	1.442	185.01	78.76	10.98	4.50	0.64	0.32	0.04	0.02	4.5
1740	+90.76	+1.407	-182.75	+78.08	-10.84	+4.46	-0.63	+0.31	-0.04	+0.02	+4.4
42	88.50	1.372	180.49	77.40	10.71	4.42	0.62	0.31	0.04	0.02	4.3
44	86.27	1.337	178.23	76.72	10.58	4.38	0.61	0.31	0.04	0.02	4.2
46	84.07	1.303	175.97	76.02	10.45	4.34	0.61	0.30	0.04	0.02	4.1
48	81.90	1.270	173.70	75.32	10.32	4.30	0.60	0.30	0.03	0.02	4.0
1750	+79.75	+1.237	-171.44	+74.61	-10.18	+4.26	-0.59	+0.30	-0.03	+0.02	+3.9
52	77.63	1.204	169.17	73.89	10.05	4.22	0.58	0.30	0.03	0.02	3.8
54	75.54	1.172	166.90	73.16	9.92	4.18	0.58	0.29	0.03	0.02	3.7
56	73.48	1.140	164.63	72.43	9.79	4.14	0.57	0.29	0.03	0.02	3.6
58	71.45	1.109	162.36	71.70	9.65	4.10	0.56	0.29	0.03	0.02	3.5
1760	+69.45	+1.078	-160.09	+70.95	-9.52	+4.05	-0.55	+0.28	-0.03	+0.02	+3.4
62	67.47	1.047	157.82	70.20	9.39	4.01	0.54	0.28	0.03	0.02	3.3
64	65.52	1.017	155.55	69.44	9.26	3.97	0.53	0.28	0.03	0.02	3.2
66	63.60	0.988	153.27	68.67	9.12	3.92	0.52	0.28	0.03	0.02	3.1
68	61.71	0.959	151.00	67.89	8.99	3.88	0.52	0.27	0.03	0.02	3.0
1770	+59.85	+0.930	-148.72	+67.11	-8.86	+3.83	-0.51	+0.27	-0.03	+0.02	+3.0
72	58.02	0.901	146.45	66.32	8.73	3.79	0.50	0.27	0.03	0.02	2.9
74	56.22	0.873	144.17	65.53	8.59	3.74	0.49	0.26	0.03	0.02	2.8
76	54.44	0.846	141.89	64.72	8.46	3.70	0.49	0.26	0.03	0.02	2.7
78	52.69	0.819	139.61	63.91	8.33	3.65	0.48	0.26	0.03	0.02	2.6
1780	+50.97	+0.792	-137.33	+63.09	-8.19	+3.60	-0.47	+0.25	-0.03	+0.02	+2.5
82	49.28	0.766	135.05	62.27	8.06	3.56	0.46	0.25	0.03	0.01	2.5
84	47.62	0.740	132.77	61.43	7.93	3.51	0.45	0.24	0.03	0.01	2.4
86	45.99	0.715	130.49	60.59	7.80	3.46	0.44	0.24	0.03	0.01	2.3
88	44.39	0.690	128.21	59.74	7.66	3.41	0.44	0.24	0.03	0.01	2.2
1790	+42.82	+0.666	-125.93	+58.89	-7.53	+3.36	-0.43	+0.23	-0.03	+0.01	+2.1
92	41.27	0.642	123.64	58.03	7.40	3.31	0.42	0.23	0.02	0.01	2.1
94	39.75	0.619	121.36	57.16	7.26	3.26	0.41	0.23	0.02	0.01	2.0
96	38.26	0.596	119.07	56.28	7.13	3.21	0.40	0.22	0.02	0.01	1.9
98	36.80	0.573	116.79	55.39	6.99	3.16	0.39	0.22	0.02	0.01	1.9
1800	+35.37	+0.551	-114.50	+54.50	-6.86	+3.11	-0.39	+0.21	-0.02	+0.01	+1.8

TABLE IV.—*Sum of secular terms and terms of long period.*

Year.	<i>l</i>	<i>g</i>	(<i>v. s. 1</i>)	(<i>v. c. 1</i>)	(<i>v. s. 2</i>)	(<i>v. c. 2</i>)	(<i>v. s. 3</i>)	(<i>v. c. 3</i>)	(<i>v. s. 4</i>)	(<i>v. c. 4</i>)	θ
	"	"	"	"	"	"	"	"	"	"	"
1800	+35.37	+0.551	-114.50	+54.50	-6.86	+3.11	-0.39	+0.21	-0.02	+0.01	+1.8
02	33.96	0.529	112.21	53.60	6.73	3.05	0.38	0.21	0.02	0.01	1.7
04	32.59	0.508	109.93	52.69	6.59	3.00	0.37	0.21	0.02	0.01	1.7
06	31.24	0.487	107.64	51.77	6.46	2.95	0.36	0.20	0.02	0.01	1.6
08	29.92	0.466	105.35	50.85	6.32	2.90	0.35	0.20	0.02	0.01	1.5
1810	+28.63	+0.446	-103.06	+49.92	-6.19	+2.84	-0.35	+0.20	-0.02	+0.01	+1.5
12	27.37	0.427	100.77	48.98	6.06	2.79	0.34	0.19	0.02	0.01	1.4
14	26.14	0.408	98.48	48.04	5.92	2.74	0.33	0.19	0.02	0.01	1.4
16	24.93	0.389	96.19	47.08	5.79	2.68	0.32	0.18	0.02	0.01	1.3
18	23.76	0.371	93.90	46.12	5.66	2.63	0.31	0.18	0.02	0.01	1.2
1820	+22.61	+0.353	-91.61	+45.15	-5.53	+2.57	-0.30	+0.17	-0.02	+0.01	+1.2
22	21.49	0.335	89.32	44.17	5.39	2.51	0.30	0.17	0.02	0.01	1.1
24	20.40	0.318	87.03	43.19	5.25	2.46	0.29	0.17	0.02	0.01	1.1
26	19.34	0.302	84.74	42.20	5.12	2.40	0.28	0.16	0.02	0.01	1.0
28	18.30	0.286	82.45	41.20	4.98	2.34	0.27	0.16	0.02	0.01	1.0
1830	+17.30	+0.270	-80.16	+40.19	-4.85	+2.28	-0.26	+0.15	-0.02	+0.01	+0.9
32	16.32	0.255	77.86	39.17	4.71	2.22	0.26	0.15	0.02	0.01	0.9
34	15.37	0.240	75.57	38.15	4.58	2.17	0.25	0.15	0.02	0.01	0.8
36	14.45	0.226	73.28	37.12	4.45	2.11	0.24	0.14	0.01	0.01	0.8
38	13.56	0.212	70.99	36.08	4.31	2.05	0.23	0.14	0.01	0.01	0.7
1840	+12.70	+0.198	-68.69	+35.04	-4.18	+1.99	-0.22	+0.13	-0.01	+0.01	+0.7
42	11.87	0.185	66.40	33.98	4.05	1.93	0.21	0.13	0.01	0.01	0.7
44	11.06	0.173	64.11	32.92	3.91	1.86	0.21	0.12	0.01	0.01	0.6
46	10.28	0.161	61.81	31.85	3.78	1.80	0.20	0.12	0.01	0.01	0.6
48	9.53	0.149	59.52	30.77	3.64	1.74	0.19	0.12	0.01	0.01	0.5
1850	+8.81	+0.138	-57.23	+29.69	-3.51	+1.68	-0.18	+0.11	-0.01	+0.01	+0.5
52	8.12	0.127	54.94	28.60	3.37	1.61	0.17	0.11	0.01	0.01	0.5
54	7.46	0.117	52.65	27.50	3.24	1.55	0.16	0.10	0.01	0.01	0.4
56	6.83	0.107	50.35	26.39	3.10	1.49	0.16	0.10	0.01	0.01	0.4
58	6.22	0.097	48.06	25.27	2.97	1.42	0.15	0.09	0.01	+0.01	0.4
1860	+5.64	+0.088	-45.77	+24.15	-2.84	+1.36	-0.14	+0.09	-0.01	0.00	+0.3
62	5.09	0.080	43.47	23.02	2.70	1.29	0.14	0.08	0.01	0.00	0.3
64	4.56	0.072	41.18	21.88	2.57	1.23	0.13	0.08	0.01	0.00	0.3
66	4.07	0.064	38.89	20.73	2.43	1.16	0.12	0.07	0.01	0.00	0.2
68	3.61	0.057	36.60	19.57	2.30	1.09	0.11	0.07	0.01	0.00	0.2
1870	+3.17	+0.050	-34.31	+18.41	-2.16	+1.03	-0.10	+0.06	-0.01	0.00	+0.2
72	2.76	0.043	32.02	17.24	2.03	0.96	0.09	0.06	0.01	0.00	0.2
74	2.38	0.037	29.73	16.06	1.90	0.89	0.08	0.06	0.01	0.00	0.1
76	2.03	0.032	27.44	14.87	1.76	0.82	0.08	0.05	0.01	0.00	0.1
78	1.71	0.027	25.15	13.68	1.63	0.75	0.07	0.05	-0.01	0.00	0.1
1880	+1.41	+0.022	-22.86	+12.47	-1.49	+0.68	-0.06	+0.04	0.00	0.00	+0.1
82	1.14	0.018	20.57	11.25	1.36	0.61	0.05	0.04	0.00	0.00	0.1
84	0.90	0.014	18.28	10.04	1.22	0.54	0.04	0.03	0.00	0.00	+0.1
86	0.69	0.011	16.00	8.82	1.09	0.47	0.04	0.03	0.00	0.00	0.0
88	0.51	0.008	13.71	7.58	0.95	0.40	0.03	0.02	0.00	0.00	0.0
1890	+0.35	+0.005	-11.42	+6.34	-0.82	+0.33	-0.02	+0.02	0.00	0.00	0.0
92	0.22	0.003	9.14	5.09	0.69	0.26	-0.01	0.01	0.00	0.00	0.0
94	0.12	0.002	6.85	3.83	0.55	0.18	0.00	+0.01	0.00	0.00	0.0
96	0.05	+0.001	4.57	2.56	0.42	0.11	0.00	0.00	0.00	0.00	0.0
98	+0.01	0.000	-2.28	+1.28	0.28	+0.03	+0.01	0.00	0.00	0.00	0.0
1900	0.00	0.000	0.00	0.00	-0.15	-0.04	+0.02	-0.01	0.00	0.00	0.0

TABLE IV.—*Sum of secular terms and terms of long period.*

Year.	<i>l</i>	<i>g</i>	(<i>v. s. 1</i>)	(<i>v. c. 1</i>)	(<i>v. s. 2</i>)	(<i>v. c. 2</i>)	(<i>v. s. 3</i>)	(<i>v. c. 3</i>)	(<i>v. s. 4</i>)	(<i>v. c. 4</i>)	θ
	"	"	"	"	"	"	"	"	"	"	"
1900	0.00	0.000	0.00	0.00	-0.15	-0.04	+0.02	-0.01	0.00	0.00	0.0
02	+0.02	0.000	+2.28	-1.29	-0.02	0.11	0.03	0.02	0.00	0.00	0.0
04	0.06	+0.001	4.56	2.59	+0.12	0.19	0.04	0.02	0.00	0.00	0.0
06	0.13	0.002	6.84	3.90	0.25	0.26	0.04	0.03	0.00	0.00	0.0
08	0.23	0.003	9.12	5.21	0.39	0.34	0.05	0.03	0.00	0.00	0.0
1910	+0.36	+0.005	+11.40	-6.54	+0.52	-0.42	+0.06	-0.04	0.00	0.00	0.0
12	0.51	0.008	13.68	7.87	0.66	0.49	0.07	0.04	0.00	0.00	0.0
14	0.69	0.011	15.96	9.21	0.79	0.57	0.08	0.05	0.00	0.00	0.0
16	0.90	0.014	18.24	10.56	0.92	0.65	0.09	0.05	0.00	0.00	+0.1
18	1.14	0.018	20.51	11.91	1.05	0.73	0.09	0.06	0.00	0.00	0.1
1920	+1.40	+0.022	+22.79	-13.28	+1.19	-0.81	+0.10	-0.06	0.00	0.00	+0.1
22	1.69	0.027	25.06	14.65	1.32	0.89	0.11	0.07	+0.01	0.00	0.1
24	2.01	0.032	27.33	16.03	1.46	0.97	0.12	0.07	0.01	0.00	0.1
26	2.36	0.037	29.60	17.42	1.59	1.05	0.13	0.08	0.01	0.00	0.1
28	2.74	0.043	31.87	18.82	1.72	1.13	0.13	0.08	0.01	0.00	0.1
1930	+3.15	+0.050	+34.14	-20.22	+1.86	-1.21	+0.14	-0.09	+0.01	0.00	+0.2
32	3.58	0.057	36.41	21.63	1.99	1.29	0.15	0.10	0.01	-0.01	0.2
34	4.04	0.064	38.68	23.05	2.12	1.38	0.16	0.10	0.01	0.01	0.2
36	4.53	0.072	40.94	24.48	2.26	1.46	0.17	0.11	0.01	0.01	0.2
38	5.05	0.080	43.21	25.92	2.39	1.54	0.17	0.11	0.01	0.01	0.3
1940	+5.59	+0.088	+45.47	-27.36	+2.52	-1.63	+0.18	-0.12	+0.01	-0.01	+0.3
42	6.16	0.097	47.73	28.82	2.66	1.71	0.19	0.13	0.01	0.01	0.3
44	6.76	0.107	49.99	30.28	2.79	1.80	0.20	0.13	0.01	0.01	0.4
46	7.39	0.117	52.25	31.75	2.92	1.88	0.21	0.14	0.01	0.01	0.4
48	8.05	0.127	54.51	33.23	3.05	1.97	0.21	0.14	0.01	0.01	0.5
1950	+8.73	+0.138	+56.77	-34.72	+3.19	-2.05	+0.22	-0.15	+0.01	-0.01	+0.5
52	9.44	0.149	59.02	36.22	3.32	2.14	0.23	0.15	0.01	0.01	0.6
54	10.18	0.161	61.27	37.72	3.45	2.23	0.24	0.16	0.01	0.01	0.6
56	10.94	0.173	63.52	39.23	3.58	2.31	0.25	0.16	0.01	0.01	0.7
58	11.73	0.185	65.77	40.75	3.72	2.40	0.25	0.17	0.01	0.01	0.7
1960	+12.55	+0.198	+68.02	-42.28	+3.85	-2.49	+0.26	-0.18	+0.01	-0.01	+0.8
62	13.40	0.212	70.27	43.81	3.98	2.58	0.27	0.18	0.01	0.01	0.8
64	14.27	0.226	72.52	45.36	4.12	2.67	0.28	0.19	0.01	0.01	0.9
66	15.17	0.240	74.76	46.91	4.25	2.76	0.28	0.19	0.02	0.01	1.0
68	16.10	0.255	77.00	48.47	4.38	2.85	0.29	0.20	0.02	0.01	1.0
1970	+17.06	+0.270	+79.24	-50.04	+4.51	-2.94	+0.30	-0.21	+0.02	-0.01	+1.1
72	18.04	0.285	81.48	51.62	4.64	3.03	0.31	0.21	0.02	0.01	1.2
74	19.05	0.301	83.72	53.21	4.77	3.13	0.32	0.22	0.02	0.01	1.2
76	20.09	0.318	85.95	54.80	4.90	3.22	0.32	0.22	0.02	0.01	1.3
78	21.16	0.335	88.18	56.40	5.04	3.31	0.33	0.23	0.02	0.01	1.4
1980	+22.25	+0.352	+90.41	-58.01	+5.17	-3.40	+0.34	-0.24	+0.02	-0.01	+1.5
82	23.37	0.370	92.64	59.63	5.30	3.50	0.35	0.24	0.02	0.01	1.6
84	24.52	0.388	94.87	61.26	5.43	3.59	0.35	0.25	0.02	0.01	1.7
86	25.70	0.407	97.10	62.90	5.56	3.69	0.36	0.26	0.02	0.01	1.8
88	26.90	0.426	99.32	64.54	5.69	3.79	0.37	0.26	0.02	0.01	1.9
1990	+28.13	+0.446	+101.54	-66.20	+5.82	-3.88	+0.38	-0.27	+0.02	-0.02	+2.0
92	29.39	0.466	103.76	67.86	5.95	3.98	0.39	0.28	0.02	0.02	2.1
94	30.67	0.486	105.98	69.53	6.08	4.08	0.39	0.28	0.02	0.02	2.2
96	31.98	0.507	108.19	71.21	6.21	4.17	0.40	0.29	0.02	0.02	2.4
98	33.32	0.528	110.40	72.89	6.34	4.27	0.41	0.30	0.02	0.02	2.5
2000	+34.68	+0.550	+112.61	-74.59	+6.47	-4.37	+0.42	-0.30	+0.02	-0.02	+2.6

TABLE V.—Arg. 1. *Action of Neptune.*

Arg.	(v. c. 0)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(v. s. 3)	(v. c. 3)
0	+	12. 20	+	1. 10	+	0. 34	—
1	6. 79	11. 76	10. 37	1. 21	2. 15	0. 32	0. 12
2	+0. 77	+0. 44	+0. 38	+0. 11	—0. 08	0. 31	0. 15
3	7. 56	11. 32	10. 75	1. 31	2. 07	0. 31	0. 17
4	+0. 75	+0. 44	+0. 36	+0. 10	—0. 09	0. 29	0. 19
5	8. 31	10. 87	11. 46	1. 40	1. 89	0. 28	0. 21
6	+0. 74	+0. 45	+0. 35	+0. 09	—0. 09	0. 28	0. 21
7	9. 05	10. 42	11. 79	1. 48	1. 80	0. 28	0. 21
8	+0. 72	+0. 45	+0. 33	+0. 08	—0. 10	0. 28	0. 21
9	9. 77	9. 96	12. 10	1. 56	1. 70	0. 26	—0. 23
10	+0. 70	+0. 46	+0. 28	1. 63	1. 59	0. 23	0. 25
11	+10. 47	9. 50	12. 38	1. 70	1. 49	0. 21	0. 26
12	+0. 68	+0. 46	+0. 26	1. 76	1. 39	0. 19	0. 27
13	11. 15	9. 04	12. 64	1. 81	1. 28	0. 17	0. 28
14	+0. 66	+0. 46	+0. 25	+0. 05	—0. 11	0. 17	0. 28
15	11. 81	8. 58	12. 89	+0. 04	—0. 11	0. 17	0. 28
16	+0. 65	+0. 46	+0. 23	+0. 04	—0. 11	0. 17	0. 28
17	12. 46	8. 12	13. 12	+0. 04	—0. 11	0. 17	0. 28
18	+0. 63	+0. 46	+0. 21	+0. 04	—0. 11	0. 17	0. 28
19	13. 09	7. 66	13. 33	1. 85	1. 17	0. 14	—0. 29
20	+0. 60	+0. 46	+0. 19	1. 89	1. 05	0. 12	0. 30
21	+13. 69	7. 20	13. 52	1. 92	0. 94	0. 10	0. 30
22	+0. 59	+0. 47	+0. 17	1. 95	0. 83	0. 07	0. 31
23	14. 28	6. 73	13. 69	1. 97	0. 72	0. 05	0. 31
24	+0. 57	+0. 46	+0. 15	+0. 02	—0. 12	0. 05	0. 31
25	14. 85	6. 27	13. 84	+0. 01	—0. 12	0. 05	0. 31
26	+0. 55	+0. 46	+0. 13	+0. 01	—0. 12	0. 05	0. 31
27	15. 40	5. 81	13. 97	+0. 01	—0. 11	0. 03	—0. 31
28	+0. 53	+0. 45	+0. 10	1. 99	0. 49	0. 00	0. 31
29	15. 93	4. 91	14. 08	1. 99	0. 38	—0. 02	0. 31
30	+0. 51	+0. 45	+0. 08	1. 98	0. 27	0. 05	0. 30
31	+16. 44	4. 46	14. 26	1. 98	0. 16	0. 07	0. 29
32	+0. 48	+0. 44	+0. 06	1. 97	—0. 02	0. 07	0. 29
33	16. 92	4. 02	14. 32	1. 97	—0. 02	0. 07	0. 29
34	+0. 46	+0. 43	+0. 03	1. 97	—0. 02	0. 07	0. 29
35	17. 38	3. 58	14. 36	1. 97	—0. 02	0. 07	0. 29
36	+0. 44	+0. 43	+0. 03	1. 97	—0. 02	0. 07	0. 29
37	17. 82	3. 15	14. 39	1. 95	—0. 02	—0. 09	—0. 28
38	+0. 43	+0. 42	+0. 01	1. 93	—0. 03	0. 11	0. 27
39	18. 25	2. 73	14. 40	1. 90	—0. 03	0. 13	0. 26
40	+0. 41	+0. 41	+0. 00	1. 87	—0. 04	0. 15	0. 25
41	+18. 66	2. 31	14. 40	1. 83	—0. 04	0. 17	0. 24
42	+0. 38	+0. 40	+0. 00	1. 83	—0. 04	0. 17	0. 24
43	19. 04	1. 49	14. 34	1. 83	—0. 04	0. 17	0. 24
44	+0. 36	+0. 40	+0. 00	1. 83	—0. 04	0. 17	0. 24
45	19. 40	1. 09	14. 29	1. 79	—0. 05	—0. 18	—0. 22
46	+0. 34	+0. 39	+0. 06	1. 74	—0. 05	0. 20	0. 21
47	19. 74	0. 70	14. 23	1. 69	—0. 06	0. 21	0. 19
48	+0. 32	+0. 37	+0. 08	1. 63	—0. 06	0. 22	0. 17
49	20. 06	0. 32	14. 15	1. 57	—0. 07	0. 23	0. 15
50	+0. 29	+0. 36	+0. 11	1. 57	—0. 07	0. 23	0. 15
51	+20. 35	0. 05	13. 96	1. 57	—0. 07	0. 23	0. 15
52	+0. 27	+0. 36	+0. 11	1. 57	—0. 07	0. 23	0. 15
53	20. 62	0. 05	13. 96	1. 57	—0. 07	0. 23	0. 15
54	+0. 25	+0. 37	+0. 11	1. 57	—0. 07	0. 23	0. 15
55	20. 87	0. 05	13. 96	1. 57	—0. 07	0. 23	0. 15
56	+0. 23	+0. 37	+0. 11	1. 57	—0. 07	0. 23	0. 15
57	21. 10	0. 05	13. 96	1. 57	—0. 07	0. 23	0. 15
58	+0. 21	+0. 37	+0. 11	1. 57	—0. 07	0. 23	0. 15
59	21. 31	0. 05	13. 96	1. 57	—0. 07	0. 23	0. 15
60	+0. 18	+0. 36	+0. 11	1. 57	—0. 07	0. 23	0. 15

TABLE V.—Arg. I. *Action of Neptune.*

Arg.	(v. c. 0)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(v. s. 3)	(v. c. 3)
	"	"	"	"	"	"	"
60	+17.52 -0.41	+7.21 +0.08	+6.94 -0.29	-0.78 -0.06	-1.14 +0.04	+0.01	+0.24
61	17.11 -0.42	7.29 +0.07	6.65 -0.28	0.84 -0.05	1.10 +0.05	0.02	0.23
62	16.69 -0.44	7.36 +0.07	6.37 -0.29	0.89 -0.05	1.05 +0.04	0.04	0.23
63	16.25 -0.46	7.43 +0.06	6.08 -0.28	0.94 -0.04	1.01 +0.04	0.06	0.22
64	15.79 -0.47	7.49 +0.06	5.80 -0.29	0.98 -0.05	0.97 +0.05	0.07	0.22
65	+15.32 -0.48	+7.55 +0.05	+5.51 -0.28	-1.03 -0.04	-0.92 +0.05	+0.08	+0.21
66	14.84 -0.49	7.60 +0.05	5.23 -0.28	1.07 -0.04	0.87 +0.05	0.10	0.20
67	14.35 -0.50	7.65 +0.04	4.95 -0.29	1.11 -0.03	0.82 +0.06	0.11	0.19
68	13.85 -0.52	7.69 +0.03	4.66 -0.28	1.14 -0.04	0.76 +0.05	0.12	0.18
69	13.33 -0.53	7.72 +0.03	4.38 -0.28	1.18 -0.03	0.71 +0.05	0.13	0.17
70	+12.80 -0.54	+7.75 +0.02	+4.10 -0.28	-1.21 -0.03	-0.66 +0.06	+0.14	+0.16
71	12.26 -0.55	7.77 +0.02	3.82 -0.28	1.24 -0.02	0.60 +0.05	0.15	0.15
72	11.71 -0.56	7.79 +0.02	3.54 -0.28	1.26 -0.02	0.55 +0.06	0.16	0.14
73	11.15 -0.57	7.81 +0.01	3.26 -0.28	1.28 -0.02	0.49 +0.05	0.17	0.13
74	10.58 -0.58	7.82 +0.01	2.98 -0.28	1.30 -0.02	0.44 +0.06	0.18	0.12
75	+10.00 -0.59	+7.83 0.00	+2.70 -0.28	-1.32 -0.02	-0.38 +0.05	+0.18	+0.10
76	9.41 -0.59	7.83 0.00	2.42 -0.27	1.34 -0.01	0.33 +0.06	0.19	0.09
77	8.82 -0.60	7.83 -0.01	2.15 -0.28	1.35 0.00	0.27 +0.06	0.19	0.08
78	8.22 -0.61	7.82 -0.01	1.87 -0.27	1.35 -0.01	0.21 +0.05	0.20	0.06
79	7.61 -0.61	7.81 -0.01	1.60 -0.27	1.36 0.00	0.16 +0.06	0.20	0.05
80	+7.00 -0.62	+7.80 -0.01	+1.33 -0.27	-1.36 -0.01	-0.10 +0.05	+0.21	+0.03
81	6.38 -0.63	7.79 -0.02	1.06 -0.27	1.37 0.00	-0.05 +0.06	0.21	+0.02
82	5.75 -0.63	7.77 -0.02	0.79 -0.27	1.37 +0.01	+0.01 +0.05	0.21	0.00
83	5.12 -0.64	7.75 -0.02	0.52 -0.27	1.36 0.00	0.06 +0.06	0.21	-0.01
84	4.48 -0.64	7.73 -0.02	+0.25 -0.27	1.36 +0.01	0.12 +0.05	0.21	0.02
85	+3.84 -0.64	+7.71 -0.03	-0.02 -0.27	-1.35 0.00	+0.17 +0.05	+0.20	-0.04
86	3.20 -0.64	7.68 -0.04	0.29 -0.26	1.35 +0.01	0.22 +0.06	0.20	0.05
87	2.56 -0.65	7.64 -0.04	0.55 -0.27	1.34 +0.02	0.28 +0.05	0.19	0.06
88	1.91 -0.65	7.60 -0.03	0.82 -0.26	1.32 +0.01	0.33 +0.05	0.19	0.07
89	1.26 -0.65	7.57 -0.03	1.08 -0.27	1.31 +0.02	0.38 +0.05	0.18	0.09
90	+0.61 -0.65	+7.54 -0.04	-1.35 -0.26	-1.29 +0.02	+0.43 +0.05	+0.18	-0.10
91	-0.04 -0.65	7.50 -0.04	1.61 -0.26	1.27 +0.02	0.48 +0.05	0.17	0.11
92	0.69 -0.65	7.46 -0.05	1.87 -0.26	1.25 +0.03	0.53 +0.05	0.16	0.12
93	1.34 -0.65	7.41 -0.05	2.13 -0.26	1.22 +0.02	0.58 +0.05	0.15	0.13
94	1.99 -0.65	7.36 -0.05	2.39 -0.27	1.20 +0.03	0.63 +0.05	0.14	0.14
95	-2.64 -0.65	+7.31 -0.05	-2.66 -0.26	-1.17 +0.03	+0.68 +0.04	+0.13	-0.15
96	3.29 -0.64	7.26 -0.06	2.92 -0.26	1.14 +0.03	0.72 +0.05	0.12	0.16
97	3.93 -0.64	7.20 -0.06	3.18 -0.26	1.11 +0.03	0.77 +0.04	0.11	0.17
98	4.57 -0.63	7.14 -0.06	3.44 -0.26	1.08 +0.03	0.81 +0.05	0.10	0.18
99	5.20 -0.63	7.08 -0.06	3.70 -0.26	1.05 +0.04	0.86 +0.04	0.09	0.19
100	-5.83 -0.62	+7.02 -0.07	-3.96 -0.26	-1.01 +0.04	+0.90 +0.04	+0.07	-0.20
101	6.45 -0.62	6.95 -0.07	4.22 -0.25	0.97 +0.04	0.94 +0.03	0.06	0.20
102	7.07 -0.62	6.88 -0.08	4.47 -0.26	0.93 +0.05	0.97 +0.04	0.05	0.21
103	7.69 -0.61	6.80 -0.08	4.73 -0.26	0.88 +0.05	1.01 +0.04	0.04	0.21
104	8.30 -0.60	6.72 -0.08	4.99 -0.26	0.84 +0.05	1.05 +0.04	0.02	0.21
105	-8.90 -0.59	+6.64 -0.09	-5.25 -0.25	-0.79 +0.05	+1.09 +0.03	+0.01	-0.22
106	9.49 -0.58	6.55 -0.09	5.50 -0.26	0.74 +0.05	1.12 +0.03	-0.01	0.22
107	10.07 -0.58	6.46 -0.09	5.76 -0.25	0.69 +0.05	1.15 +0.03	0.02	0.22
108	10.65 -0.57	6.37 -0.10	6.01 -0.26	0.64 +0.05	1.18 +0.03	0.03	0.22
109	11.22 -0.56	6.27 -0.10	6.27 -0.25	0.59 +0.06	1.21 +0.03	0.05	0.22
110	-11.78 -0.56	+6.17 -0.11	-6.52 -0.25	-0.53 +0.05	+1.24 +0.02	-0.06	-0.21
111	12.34 -0.54	6.06 -0.11	6.77 -0.25	0.48 +0.06	1.26 +0.03	0.08	0.21
112	12.88 -0.53	5.95 -0.12	7.02 -0.25	0.42 +0.06	1.29 +0.02	0.09	0.21
113	13.41 -0.51	5.83 -0.12	7.27 -0.25	0.36 +0.07	1.31 +0.02	0.10	0.20
114	13.92 -0.50	5.71 -0.13	7.52 -0.25	0.29 +0.06	1.33 +0.02	0.12	0.20
115	-14.42 -0.50	+5.58 -0.13	-7.77 -0.24	-0.23 +0.07	+1.35 +0.01	-0.14	-0.19
116	14.92 -0.48	5.45 -0.14	8.01 -0.25	0.16 +0.07	1.36 +0.01	0.15	0.18
117	15.40 -0.46	5.31 -0.15	8.26 -0.24	0.09 +0.06	1.37 +0.01	0.16	0.17
118	15.86 -0.45	5.16 -0.16	8.50 -0.24	-0.03 +0.07	1.38 0.00	0.17	0.16
119	16.31 -0.44	5.00 -0.16	8.74 -0.23	+0.04 +0.08	1.38 0.00	0.19	0.15
120	-16.75	+4.84	-8.97	+0.12	+1.38	-0.20	-0.14

TABLE V.—Arg. 1. *Action of Neptune.*

Arg.	(v. c. 0)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(v. s. 3)	(v. c. 3)
	"	"	"	"	"	"	"
120	-16.75 -0.43	+ 4.84 -0.16	- 8.97 -0.24	+0.12 +0.07	+1.38 0.00	-0.20	-0.14
121	17.18 -0.41	4.68 -0.17	9.21 -0.23	0.19 +0.07	1.38 0.00	0.21	0.13
122	17.59 -0.39	4.51 -0.18	9.44 -0.23	0.26 +0.07	1.38 -0.01	0.22	0.12
123	17.98 -0.38	4.33 -0.19	9.67 -0.22	0.33 +0.08	1.37 -0.01	0.23	0.11
124	18.36 -0.36	4.14 -0.19	9.89 -0.22	0.41 +0.07	1.36 -0.02	0.23	0.09
125	-18.72 -0.35	+ 3.95 -0.20	-10.11 -0.21	+0.48 +0.08	+1.34 -0.02	-0.24	-0.08
126	19.07 -0.33	3.75 -0.21	10.32 -0.21	0.56 +0.07	1.32 -0.02	0.24	0.06
127	19.40 -0.31	3.54 -0.21	10.53 -0.21	0.63 +0.07	1.30 -0.02	0.25	0.04
128	19.71 -0.30	3.33 -0.22	10.74 -0.20	0.70 +0.08	1.28 -0.03	0.25	0.03
129	20.01 -0.28	3.11 -0.23	10.94 -0.20	0.78 +0.07	1.25 -0.03	0.26	-0.01
130	-20.29 -0.26	+ 2.88 -0.24	-11.14 -0.19	+0.85 +0.08	+1.22 -0.04	-0.26	+0.01
131	20.55 -0.24	2.64 -0.25	11.33 -0.18	0.93 +0.07	1.18 -0.04	0.26	0.03
132	20.79 -0.22	2.39 -0.25	11.51 -0.18	1.00 +0.07	1.14 -0.05	0.26	0.04
133	21.01 -0.21	2.14 -0.26	11.69 -0.17	1.07 +0.07	1.09 -0.05	0.26	0.06
134	21.22 -0.19	1.88 -0.27	11.86 -0.16	1.14 +0.07	1.04 -0.05	0.25	0.08
135	-21.41 -0.17	+ 1.61 -0.28	-12.02 -0.15	+1.21 +0.06	+0.99 -0.06	-0.25	+0.10
136	21.58 -0.15	1.33 -0.28	12.17 -0.15	1.27 +0.07	0.93 -0.06	0.24	0.12
137	21.73 -0.12	1.05 -0.29	12.32 -0.14	1.34 +0.06	0.87 -0.06	0.24	0.13
138	21.85 -0.10	0.76 -0.30	12.46 -0.13	1.40 +0.05	0.81 -0.07	0.23	0.15
139	21.95 -0.09	0.46 -0.31	12.59 -0.12	1.45 +0.06	0.74 -0.07	0.22	0.17
140	-22.04 -0.06	+ 0.15 -0.31	-12.71 -0.11	+1.51 +0.05	+0.67 -0.07	-0.21	+0.19
141	22.10 -0.05	0.16 -0.32	12.82 -0.10	1.56 +0.05	0.60 -0.08	0.20	0.20
142	22.15 -0.03	0.48 -0.33	12.92 -0.08	1.61 +0.05	0.52 -0.08	0.18	0.22
143	22.18 0.00	0.81 -0.33	13.00 -0.08	1.66 +0.04	0.44 -0.08	0.17	0.23
144	22.18 +0.03	1.14 -0.34	13.08 -0.07	1.70 +0.04	0.36 -0.09	0.15	0.25
145	-22.15 +0.04	- 1.48 -0.35	-13.15 -0.06	+1.74 +0.04	+0.27 -0.09	-0.13	+0.26
146	22.11 +0.06	1.83 -0.36	13.21 -0.04	1.78 +0.03	0.18 -0.10	0.12	0.27
147	22.05 +0.08	2.19 -0.36	13.25 -0.03	1.81 +0.02	+0.08 -0.09	0.10	0.28
148	21.97 +0.10	2.55 -0.37	13.28 -0.02	1.83 +0.02	-0.01 -0.10	0.08	0.29
149	21.87 +0.13	2.92 -0.37	13.30 0.00	1.85 +0.01	0.11 -0.10	0.06	0.30
150	-21.74 +0.15	- 3.29 -0.38	-13.30 +0.01	+1.86 +0.01	-0.21 -0.10	-0.04	+0.31
151	21.59 +0.17	3.67 -0.38	13.29 +0.02	1.87 +0.01	0.31 -0.10	-0.01	0.31
152	21.42 +0.20	4.05 -0.39	13.27 +0.04	1.88 0.00	0.41 -0.11	+0.01	0.32
153	21.22 +0.22	4.44 -0.39	13.23 +0.05	1.88 -0.01	0.52 -0.10	0.04	0.32
154	21.00 +0.23	4.83 -0.39	13.18 +0.07	1.87 -0.01	0.62 -0.10	0.06	0.32
155	-20.77 +0.26	- 5.22 -0.40	-13.11 +0.09	+1.86 -0.02	-0.72 -0.11	+0.08	+0.32
156	20.51 +0.28	5.62 -0.40	13.02 +0.10	1.84 -0.02	0.83 -0.11	0.11	0.31
157	20.23 +0.30	6.02 -0.40	12.92 +0.11	1.82 -0.03	0.94 -0.10	0.13	0.31
158	19.93 +0.32	6.42 -0.41	12.81 +0.13	1.79 -0.04	1.04 -0.10	0.15	0.30
159	19.61 +0.35	6.83 -0.41	12.68 +0.15	1.75 -0.04	1.14 -0.11	0.18	0.29
160	-19.26 +0.37	- 7.24 -0.41	-12.53 +0.17	+1.71 -0.05	-1.25 -0.10	+0.20	+0.28
161	18.89 +0.39	7.65 -0.41	12.36 +0.18	1.66 -0.06	1.35 -0.10	0.22	0.27
162	18.50 +0.41	8.06 -0.41	12.18 +0.20	1.60 -0.06	1.45 -0.10	0.24	0.26
163	18.09 +0.43	8.47 -0.41	11.98 +0.22	1.54 -0.06	1.55 -0.09	0.27	0.24
164	17.66 +0.45	8.88 -0.41	11.76 +0.24	1.48 -0.07	1.64 -0.09	0.29	0.22
165	-17.21 +0.48	- 9.29 -0.41	-11.52 +0.25	+1.41 -0.08	-1.73 -0.09	+0.31	+0.20
166	16.73 +0.49	9.70 -0.40	11.27 +0.27	1.33 -0.08	1.82 -0.09	0.32	0.18
167	16.24 +0.51	10.10 -0.40	11.00 +0.29	1.25 -0.09	1.91 -0.08	0.34	0.16
168	15.73 +0.54	10.50 -0.40	10.71 +0.31	1.16 -0.10	1.99 -0.07	0.35	0.14
169	15.19 +0.56	10.90 -0.40	10.40 +0.33	1.06 -0.10	2.06 -0.08	0.36	0.11
170	-14.63 +0.58	-11.30 -0.39	-10.07 +0.34	+0.96 -0.10	-2.14 -0.07	+0.37	+0.08
171	14.05 +0.60	11.69 -0.38	9.73 +0.36	0.86 -0.11	2.21 -0.06	0.38	0.05
172	13.45 +0.62	12.07 -0.38	9.37 +0.38	0.75 -0.12	2.27 -0.05	0.39	+0.02
173	12.83 +0.63	12.45 -0.37	8.99 +0.40	0.63 -0.12	2.32 -0.05	0.40	-0.01
174	12.20 +0.65	12.82 -0.37	8.59 +0.42	0.51 -0.12	2.37 -0.05	0.40	0.04
175	-11.55 +0.67	-13.19 -0.36	- 8.17 +0.43	+0.39 -0.13	-2.42 -0.04	+0.40	-0.07
176	10.88 +0.69	13.55 -0.34	7.74 +0.45	0.26 -0.13	2.46 -0.03	0.40	0.10
177	10.19 +0.71	13.89 -0.34	7.29 +0.47	+0.13 -0.13	2.49 -0.03	0.39	0.13
178	9.48 +0.73	13.23 -0.33	6.82 +0.49	0.00 -0.14	2.52 -0.02	0.39	0.16
179	8.75 +0.74	14.56 -0.32	6.33 +0.51	-0.14 -0.14	2.54 -0.01	0.38	0.19
180	- 8.01	-14.88	- 5.82	-0.28	-2.55	+0.36	-0.22

TABLE V.—Arg. I. *Action of Neptune.*

Arg.	(v. c. 0)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(v. s. 3)	(v. c. 3)
180	— 8.01	—14.88	— 5.82	—0.28	—2.55	+0.36	—0.22
181	7.25 +0.76	15.19 —0.31	5.30 +0.52	0.42 —0.14	2.55 +0.00	0.35	0.24
182	6.48 +0.77	15.49 —0.30	4.76 +0.54	0.56 —0.14	2.54 +0.01	0.33	0.27
183	5.69 +0.79	15.77 —0.28	4.21 +0.55	0.70 —0.14	2.53 +0.01	0.32	0.30
184	4.88 +0.81	16.04 —0.27	3.64 +0.57	0.85 —0.15	2.51 +0.02	0.30	0.32
	+0.83	—0.26	+0.58	—0.14	+0.03		
185	— 4.05	—16.30	— 3.06	—0.99	—2.48	+0.28	—0.35
186	3.21 +0.84	16.54 —0.24	2.46 +0.60	1.14 —0.15	2.44 +0.04	0.25	0.37
187	2.36 +0.85	16.77 —0.23	1.85 +0.61	1.28 —0.14	2.40 +0.04	0.22	0.39
188	1.50 +0.86	16.98 —0.21	1.22 +0.63	1.42 —0.14	2.35 +0.05	0.19	0.41
189	— 0.62	17.17 —0.19	— 0.58	1.57 —0.15	2.29 +0.06	0.16	0.43
	+0.89	—0.17	+0.65	—0.14	+0.07		
190	+ 0.27	—17.34	+ 0.07	—1.71	—2.22	+0.13	—0.44
191	1.17 +0.90	17.50 —0.16	0.73 +0.66	1.85 —0.14	2.14 +0.08	0.10	0.46
192	2.08 +0.91	17.64 —0.14	1.40 +0.67	1.98 —0.13	2.05 +0.09	0.06	0.47
193	3.01 +0.93	17.76 —0.12	2.09 +0.69	2.11 —0.13	1.96 +0.09	+0.03	0.47
194	3.95 +0.94	17.87 —0.11	2.78 +0.69	2.24 —0.13	1.86 +0.10	—0.01	0.48
	+0.95	—0.09	+0.70		+0.11		
195	+ 4.90	—17.96	+ 3.48	—2.37	—1.75	—0.05	—0.48
196	5.86 +0.96	18.02 —0.06	4.20 +0.72	2.49 —0.12	1.63 +0.12	0.08	0.48
197	6.83 +0.97	18.06 —0.04	4.92 +0.72	2.60 —0.11	1.50 +0.13	0.12	0.48
198	7.80 +0.97	18.09 —0.03	5.64 +0.72	2.71 —0.11	1.37 +0.13	0.16	0.47
199	8.78 +0.98	18.09 +0.00	6.37 +0.73	2.81 —0.10	1.23 +0.14	0.19	0.46
	+0.99	+0.02	+0.74	—0.10	+0.14		
200	+ 9.77	—18.07	+ 7.11	—2.91	—1.09	—0.23	—0.45
201	10.77 +1.00	18.03 +0.04	7.86 +0.75	3.00 —0.09	0.94 +0.15	0.26	0.44
202	11.78 +1.01	18.03 +0.07	8.61 +0.75	3.08 —0.08	0.78 +0.16	0.30	0.42
203	12.79 +1.01	17.96 +0.09	9.35 +0.74	3.15 —0.07	0.62 +0.16	0.33	0.40
204	13.81 +1.02	17.87 +0.11	10.10 +0.75	3.22 —0.07	0.45 +0.17	0.37	0.38
	+1.02	+0.13	+0.75	—0.06	+0.17		
205	+14.83	—17.63	+10.85	—3.28	—0.28	—0.40	—0.35
206	15.86 +1.03	17.47 +0.16	11.60 +0.75	3.33 —0.05	—0.10 +0.18	0.43	0.32
207	16.89 +1.03	17.29 +0.18	12.35 +0.75	3.37 —0.04	+0.08 +0.18	0.45	0.29
208	17.92 +1.03	17.09 +0.20	13.09 +0.74	3.40 —0.03	0.26 +0.18	0.48	0.26
209	18.95 +1.03	16.86 +0.23	13.83 +0.74	3.42 —0.02	0.45 +0.19	0.50	0.22
	+1.03	+0.25	+0.75	—0.01	+0.19		
210	+19.98	—16.61	+14.58	—3.43	+0.64	—0.53	—0.18
211	21.01 +1.03	16.34 +0.27	15.32 +0.74	3.43 +0.00	0.83 +0.19	0.54	0.15
212	22.05 +1.04	16.04 +0.30	16.05 +0.73	3.42 +0.01	1.03 +0.20	0.56	0.11
213	23.09 +1.04	15.72 +0.32	16.76 +0.71	3.40 +0.02	1.22 +0.19	0.57	0.07
214	24.13 +1.04	15.38 +0.34	17.47 +0.71	3.37 +0.03	1.41 +0.19	0.58	—0.02
	+1.03	+0.37	+0.70	+0.04	+0.19		
215	+25.16	—15.01	+18.17	—3.33	+1.60	—0.58	+0.02
216	26.19 +1.03	14.62 +0.39	18.86 +0.69	3.28 +0.05	1.79 +0.19	0.58	0.06
217	27.22 +1.03	14.21 +0.41	19.54 +0.68	3.22 +0.06	1.98 +0.19	0.58	0.11
218	28.24 +1.02	13.78 +0.43	20.21 +0.67	3.15 +0.07	2.16 +0.18	0.58	0.15
219	29.26 +1.02	13.33 +0.45	20.87 +0.66	3.07 +0.08	2.35 +0.19	0.57	0.20
	+1.02	+0.48	+0.64	+0.09	+0.18		
220	+30.28	—12.85	+21.51	—2.98	+2.53	—0.56	+0.24
221	31.29 +1.01	12.35 +0.50	22.14 +0.63	2.88 +0.10	2.70 +0.17	0.55	0.28
222	32.30 +1.01	11.83 +0.52	22.76 +0.62	2.77 +0.11	2.87 +0.17	0.53	0.32
223	33.30 +1.00	11.29 +0.54	23.36 +0.60	2.65 +0.12	3.04 +0.17	0.51	0.36
224	34.29 +0.99	10.73 +0.56	23.93 +0.57	2.52 +0.13	3.20 +0.16	0.49	0.40
	+0.98	+0.58	+0.55	+0.14	+0.15		
225	+35.27	—10.15	+24.48	—2.38	+3.35	—0.46	+0.44
226	36.24 +0.97	9.55 +0.60	25.01 +0.53	2.23 +0.15	3.50 +0.15	0.43	0.47
227	37.20 +0.96	8.94 +0.61	25.53 +0.52	2.08 +0.15	3.64 +0.14	0.40	0.50
228	38.16 +0.96	8.31 +0.63	26.03 +0.50	1.92 +0.16	3.77 +0.13	0.37	0.53
229	39.11 +0.95	7.66 +0.65	26.50 +0.47	1.75 +0.17	3.89 +0.12	0.33	0.56
	+0.94	+0.67	+0.45	+0.18	+0.11		
230	+40.05	— 6.99	+26.95	—1.57	+4.00	—0.29	+0.59
231	40.97 +0.92	6.31 +0.68	27.38 +0.43	1.39 +0.18	4.11 +0.11	0.25	0.61
232	41.88 +0.91	5.62 +0.69	27.79 +0.41	1.20 +0.19	4.20 +0.09	0.21	0.63
233	42.78 +0.90	4.91 +0.71	28.17 +0.38	1.00 +0.20	4.28 +0.08	0.16	0.65
234	43.67 +0.89	4.19 +0.72	28.52 +0.35	0.80 +0.20	4.36 +0.08	0.12	0.66
	+0.87	+0.74	+0.32	+0.21	+0.06		
235	+44.54	— 3.45	+28.84	—0.59	+4.42	—0.07	+0.67
236	45.40 +0.86	2.70 +0.75	29.14 +0.30	0.38 +0.21	4.47 +0.05	—0.03	0.68
237	46.24 +0.84	1.95 +0.75	29.41 +0.27	—0.17 +0.21	4.51 +0.04	+0.02	0.68
238	47.06 +0.82	1.19 +0.76	29.65 +0.24	+0.04 +0.21	4.54 +0.03	0.07	0.68
239	47.87 +0.81	— 0.42	29.87 +0.22	0.25 +0.21	4.55 +0.01	0.11	0.67
	+0.80	+0.78	+0.19	+0.22	+0.01		
240	+48.67	+ 0.36	+30.06	+0.47	+4.56	+0.16	+0.67

TABLE V.—Arg. 1. *Action of Neptune.*

Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(v. s. 3)	(v. c. 3)
	"	"	"	"	"	"	"
240	+48.67 +0.78	+ 0.36 +0.79	+30.06 +0.15	+0.47 +0.22	+4.56 -0.01	+0.16	+0.67
241	49.45 +0.76	1.15 +0.79	30.21 +0.12	0.69 +0.21	4.55 -0.02	0.20	0.65
242	50.21 +0.74	1.94 +0.79	30.33 +0.10	0.90 +0.22	4.53 -0.03	0.25	0.64
243	50.95 +0.72	2.73 +0.79	30.43 +0.07	1.12 +0.21	4.50 -0.05	0.29	0.62
244	51.67 +0.71	3.52 +0.80	30.50 +0.03	1.33 +0.21	4.45 -0.06	0.33	0.60
245	+52.38 +0.69	+ 4.32 +0.80	+30.53 +0.01	+1.54 +0.21	+4.39 -0.06	+0.37	+0.58
246	53.07 +0.67	5.12 +0.80	30.54 -0.03	1.75 +0.21	4.33 -0.08	0.41	0.55
247	53.74 +0.65	5.92 +0.80	30.51 -0.06	1.96 +0.20	4.25 -0.09	0.45	0.52
248	54.39 +0.63	6.72 +0.80	30.45 -0.09	2.16 +0.19	4.16 -0.11	0.48	0.48
249	55.02 +0.61	7.52 +0.79	30.36 -0.13	2.35 +0.19	4.05 -0.11	0.51	0.45
250	+55.63 +0.58	+ 8.31 +0.79	+30.23 -0.16	+2.54 +0.19	+3.94 -0.12	+0.54	+0.41
251	56.21 +0.56	9.10 +0.78	30.07 -0.18	2.73 +0.18	3.82 -0.14	0.57	0.37
252	56.77 +0.54	9.88 +0.78	29.89 -0.21	2.91 +0.17	3.68 -0.15	0.59	0.33
253	57.31 +0.52	10.66 +0.77	29.68 -0.25	3.08 +0.16	3.53 -0.15	0.61	0.28
254	57.83 +0.50	11.43 +0.75	29.43 -0.28	3.24 +0.15	3.38 -0.16	0.63	0.24
255	+58.33 +0.48	+12.18 +0.75	+29.15 -0.31	+3.39 +0.14	+3.22 -0.18	+0.64	+0.19
256	58.81 +0.46	12.93 +0.74	28.84 -0.34	3.53 +0.13	3.04 -0.18	0.65	0.14
257	59.27 +0.43	13.67 +0.72	28.50 -0.37	3.66 +0.12	2.86 -0.18	0.66	0.10
258	59.70 +0.41	14.39 +0.71	28.13 -0.41	3.78 +0.12	2.68 -0.20	0.66	+0.05
259	60.11 +0.39	15.10 +0.69	27.72 -0.43	3.90 +0.11	2.48 -0.20	0.65	0.00
260	+60.50 +0.36	+15.79 +0.68	+27.29 -0.46	+4.01 +0.09	+2.28 -0.21	+0.65	-0.05
261	60.86 +0.34	16.47 +0.66	26.83 -0.49	4.10 +0.08	2.07 -0.21	0.64	0.09
262	61.20 +0.31	17.13 +0.65	26.34 -0.51	4.18 +0.07	1.86 -0.22	0.63	0.14
263	61.51 +0.29	17.78 +0.63	25.83 -0.54	4.25 +0.06	1.64 -0.22	0.62	0.18
264	61.80 +0.26	18.41 +0.61	25.29 -0.57	4.31 +0.04	1.42 -0.22	0.60	0.23
265	+62.06 +0.24	+19.02 +0.59	+24.72 -0.59	+4.35 +0.03	+1.20 -0.22	+0.57	-0.27
266	62.30 +0.22	19.61 +0.56	24.13 -0.61	4.38 +0.02	0.98 -0.23	0.55	0.31
267	62.52 +0.20	20.17 +0.54	23.52 -0.64	4.40 +0.01	0.75 -0.23	0.52	0.34
268	62.72 +0.17	20.71 +0.51	22.88 -0.67	4.41 -0.01	0.52 -0.23	0.49	0.38
269	62.89 +0.14	21.22 +0.50	22.21 -0.69	4.40 -0.02	0.29 -0.23	0.46	0.42
270	+63.03 +0.12	+21.72 +0.47	+21.52 -0.71	+4.38 -0.03	+0.06 -0.22	+0.42	-0.45
271	63.15 +0.10	22.19 +0.45	20.81 -0.73	4.35 -0.04	-0.16 -0.22	0.38	0.47
272	63.25 +0.07	22.64 +0.42	20.08 -0.75	4.31 -0.06	0.38 -0.22	0.34	0.50
273	63.32 +0.04	23.06 +0.39	19.33 -0.77	4.25 -0.07	0.60 -0.22	0.30	0.52
274	63.36 +0.02	23.45 +0.37	18.56 -0.79	4.18 -0.08	0.82 -0.22	0.26	0.54
275	+63.38 -0.01	+23.82 +0.34	+17.77 -0.80	+4.10 -0.09	-1.04 -0.21	+0.22	-0.55
276	63.37 -0.03	24.16 +0.32	16.97 -0.81	4.01 -0.11	1.25 -0.21	0.17	0.56
277	63.34 -0.05	24.48 +0.28	16.16 -0.83	3.90 -0.12	1.46 -0.20	0.13	0.57
278	63.29 -0.08	24.76 +0.25	15.33 -0.85	3.78 -0.12	1.66 -0.19	0.08	0.57
279	63.21 -0.10	25.01 +0.23	14.48 -0.86	3.66 -0.13	1.85 -0.19	+0.04	0.57
280	+63.11 -0.12	+25.24 +0.19	+13.62 -0.87	+3.53 -0.14	-2.04 -0.18	-0.01	-0.57
281	62.99 -0.15	25.43 +0.16	12.75 -0.88	3.39 -0.16	2.22 -0.16	0.05	0.57
282	62.84 -0.17	25.59 +0.14	11.87 -0.88	3.23 -0.16	2.38 -0.16	0.10	0.56
283	62.67 -0.20	25.73 +0.11	10.99 -0.89	3.07 -0.17	2.54 -0.16	0.14	0.55
284	62.47 -0.22	25.84 +0.07	10.10 -0.90	2.90 -0.19	2.70 -0.14	0.18	0.53
285	+62.25 -0.24	+25.91 +0.04	+ 9.20 -0.91	+2.71 -0.19	-2.84 -0.13	-0.22	-0.51
286	62.01 -0.26	25.95 +0.01	8.29 -0.91	2.52 -0.19	2.97 -0.12	0.26	0.49
287	61.75 -0.29	25.96 -0.02	7.38 -0.91	2.33 -0.20	3.09 -0.11	0.29	0.47
288	61.46 -0.31	25.94 -0.05	6.47 -0.91	2.13 -0.20	3.20 -0.10	0.33	0.44
289	61.15 -0.33	25.89 -0.08	5.56 -0.92	1.93 -0.21	3.30 -0.09	0.36	0.41
290	+60.82 -0.35	+25.81 -0.12	+ 4.64 -0.91	+1.72 -0.21	-3.39 -0.08	-0.39	-0.38
291	60.47 -0.38	25.69 -0.14	3.73 -0.91	1.51 -0.21	3.47 -0.06	0.42	0.35
292	60.09 -0.40	25.55 -0.17	2.82 -0.90	1.30 -0.22	3.53 -0.05	0.44	0.31
293	59.69 -0.42	25.38 -0.20	1.92 -0.90	1.08 -0.22	3.58 -0.04	0.46	0.28
294	59.27 -0.44	25.18 -0.23	1.02 -0.90	0.86 -0.23	3.62 -0.03	0.48	0.24
295	+58.83 -0.46	+24.95 -0.26	+ 0.12 -0.89	+0.63 -0.22	-3.65 -0.01	-0.50	-0.20
296	58.37 -0.47	24.69 -0.29	0.77 -0.88	0.41 -0.22	3.66 0.00	0.51	0.16
297	57.90 -0.49	24.40 -0.32	1.65 -0.87	+0.19 -0.22	3.66 +0.01	0.52	0.12
298	57.41 -0.51	24.08 -0.35	2.52 -0.86	-0.03 -0.22	3.65 +0.02	0.53	0.08
299	56.90 -0.53	23.73 -0.37	3.38 -0.85	0.25 -0.22	3.63 +0.03	0.53	-0.03
300	+56.37	+23.36	- 4.23	-0.47	-3.60	-0.53	+0.01

TABLE V.—Arg. I. *Action of Neptune.*

Arg.	(v. c. 0)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(v. s. 3)	(v. c. 3)
	//	//	//	//	//	//	//
300	+56.37 -0.55	+23.36 -0.40	-4.23 -0.84	-0.47 -0.21	-3.60 +0.04	-0.53	+0.01
301	55.82 -0.56	22.96 -0.42	5.07 -0.82	0.68 -0.21	3.56 +0.06	0.53	0.05
302	55.26 -0.58	22.54 -0.45	5.89 -0.81	0.89 -0.20	3.50 +0.07	0.52	0.08
303	54.68 -0.60	22.09 -0.47	6.70 -0.79	1.09 -0.20	3.43 +0.07	0.51	0.12
304	54.08 -0.61	21.62 -0.50	7.49 -0.78	1.29 -0.20	3.36 +0.09	0.50	0.16
305	+53.47 -0.63	+21.12 -0.53	-8.27 -0.76	-1.49 -0.19	-3.27 +0.10	-0.48	+0.20
306	52.84 -0.64	20.59 -0.55	9.03 -0.75	1.68 -0.18	3.17 +0.11	0.46	0.24
307	52.20 -0.65	20.04 -0.57	9.78 -0.72	1.86 -0.17	3.06 +0.12	0.44	0.27
308	51.55 -0.67	19.47 -0.59	10.50 -0.70	2.03 -0.17	2.94 +0.13	0.42	0.30
309	50.88 -0.68	18.88 -0.61	11.20 -0.68	2.20 -0.16	2.81 +0.14	0.39	0.33
310	+50.20 -0.69	+18.27 -0.62	-11.88 -0.66	-2.36 -0.14	-2.67 +0.14	-0.36	+0.36
311	49.51 -0.70	17.65 -0.65	12.54 -0.64	2.50 -0.14	2.53 +0.15	0.34	0.38
312	48.81 -0.72	17.00 -0.67	13.18 -0.62	2.64 -0.13	2.38 +0.16	0.31	0.41
313	48.09 -0.73	16.33 -0.68	13.80 -0.59	2.77 -0.13	2.22 +0.16	0.27	0.43
314	47.36 -0.74	15.65 -0.69	14.39 -0.57	2.89 -0.11	2.06 +0.17	0.24	0.45
315	+46.62 -0.75	+14.96 -0.71	-14.96 -0.54	-3.00 -0.11	-1.89 +0.18	-0.21	+0.46
316	45.87 -0.75	14.25 -0.72	15.50 -0.52	3.11 -0.09	1.71 +0.18	0.17	0.48
317	45.12 -0.76	13.53 -0.74	16.02 -0.49	3.20 -0.07	1.53 +0.19	0.13	0.49
318	44.36 -0.77	12.79 -0.75	16.51 -0.47	3.27 -0.07	1.34 +0.19	0.10	0.49
319	43.59 -0.78	12.04 -0.76	16.98 -0.44	3.34 -0.06	1.15 +0.19	0.06	0.50
320	+42.81 -0.78	+11.28 -0.77	-17.42 -0.41	-3.40 -0.04	-0.96 +0.19	-0.02	+0.50
321	42.03 -0.79	10.51 -0.77	17.83 -0.38	3.44 -0.03	0.77 +0.19	+0.02	0.49
322	41.24 -0.79	9.74 -0.78	18.21 -0.36	3.47 -0.02	0.58 +0.19	0.05	0.49
323	40.45 -0.80	8.96 -0.79	18.57 -0.33	3.49 -0.01	0.39 +0.19	0.09	0.48
324	39.65 -0.80	8.17 -0.79	18.90 -0.30	3.50 +0.01	0.20 +0.19	0.13	0.47
325	+38.85 -0.81	+7.38 -0.80	-19.20 -0.28	-3.49 +0.02	-0.01 +0.19	+0.16	+0.46
326	38.04 -0.81	6.58 -0.80	19.48 -0.25	3.47 +0.02	+0.18 +0.19	0.20	0.44
327	37.23 -0.81	5.78 -0.80	19.73 -0.21	3.45 +0.03	0.37 +0.18	0.23	0.43
328	36.42 -0.81	4.98 -0.80	19.94 -0.19	3.42 +0.04	0.55 +0.18	0.26	0.41
329	35.61 -0.81	4.18 -0.80	20.13 -0.16	3.38 +0.06	0.73 +0.18	0.29	0.38
330	+34.80 -0.81	+3.38 -0.80	-20.29 -0.13	-3.32 +0.07	+0.91 +0.18	+0.32	+0.36
331	33.99 -0.82	2.58 -0.80	20.42 -0.10	3.25 +0.08	1.09 +0.17	0.34	0.34
332	33.17 -0.81	1.78 -0.79	20.52 -0.08	3.17 +0.08	1.26 +0.16	0.36	0.31
333	32.36 -0.81	0.99 -0.78	20.60 -0.05	3.09 +0.09	1.42 +0.15	0.38	0.28
334	31.55 -0.81	+0.21 -0.78	20.65 -0.03	3.00 +0.11	1.57 +0.15	0.40	0.25
335	+30.74 -0.81	-0.57 -0.77	-20.68 +0.01	-2.89 +0.11	+1.72 +0.14	+0.42	+0.22
336	29.93 -0.80	1.34 -0.77	20.67 +0.03	2.78 +0.12	1.86 +0.14	0.43	0.18
337	29.13 -0.80	2.11 -0.76	20.64 +0.06	2.66 +0.12	2.00 +0.13	0.45	0.15
338	28.33 -0.80	2.87 -0.74	20.58 +0.08	2.54 +0.13	2.13 +0.12	0.46	0.11
339	27.53 -0.79	3.61 -0.73	20.50 +0.11	2.41 +0.14	2.25 +0.11	0.47	0.08
340	+26.74 -0.78	-4.34 -0.72	-20.39 +0.13	-2.27 +0.15	+2.36 +0.11	+0.48	+0.04
341	25.96 -0.78	5.06 -0.71	20.26 +0.16	2.12 +0.14	2.47 +0.10	0.48	+0.01
342	25.18 -0.77	5.77 -0.70	20.10 +0.18	1.98 +0.15	2.57 +0.08	0.47	-0.03
343	24.41 -0.77	6.47 -0.69	19.92 +0.21	1.83 +0.16	2.65 +0.08	0.47	0.06
344	23.64 -0.76	7.16 -0.67	19.71 +0.23	1.67 +0.16	2.73 +0.07	0.46	0.10
345	+22.88 -0.74	-7.83 -0.65	-19.48 +0.25	-1.51 +0.16	+2.80 +0.06	+0.44	-0.13
346	22.14 -0.74	8.48 -0.64	19.23 +0.27	1.35 +0.17	2.86 +0.05	0.43	0.16
347	21.40 -0.73	9.12 -0.62	18.96 +0.29	1.18 +0.17	2.91 +0.04	0.42	0.20
348	20.67 -0.72	9.74 -0.60	18.67 +0.31	1.01 +0.16	2.95 +0.03	0.40	0.23
349	19.95 -0.72	10.34 -0.59	18.36 +0.33	0.85 +0.17	2.98 +0.02	0.38	0.26
350	+19.23 -0.70	-10.93 -0.57	-18.03 +0.35	-0.68 +0.17	+3.00 +0.01	+0.37	-0.29
351	18.53 -0.69	11.50 -0.55	17.68 +0.36	0.51 +0.17	3.01 0.00	0.35	0.31
352	17.84 -0.68	12.05 -0.53	17.32 +0.38	0.34 +0.16	3.01 -0.01	0.32	0.34
353	17.16 -0.67	12.58 -0.51	16.94 +0.40	0.18 +0.16	3.00 -0.01	0.30	0.36
354	16.49 -0.66	13.09 -0.50	16.54 +0.42	-0.02 +0.16	2.99 -0.02	0.27	0.38
355	+15.83 -0.64	-13.59 -0.48	-16.12 +0.43	+0.14 +0.16	+2.97 -0.04	+0.24	-0.40
356	15.19 -0.63	14.07 -0.46	15.69 +0.44	0.30 +0.16	2.93 -0.04	0.21	0.42
357	14.56 -0.62	14.53 -0.44	15.25 +0.45	0.46 +0.16	2.89 -0.05	0.18	0.43
358	13.94 -0.61	14.97 -0.41	14.80 +0.47	0.62 +0.15	2.84 -0.05	0.15	0.44
359	13.33 -0.59	15.38 -0.39	14.33 +0.48	0.77 +0.14	2.79 -0.06	0.11	0.45
360	+12.74	-15.77	-13.85	+0.91	+2.73	+0.08	-0.46

TABLE. V.—Arg. 1. *Action of Neptune.*

Arg.	(v. c. 0)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(v. s. 3)	(v. c. 3)
	//	//	//	//	//	//	//
360	+12.74 -0.58	-15.77 -0.38	-13.85 +0.49	+0.91 +0.14	+2.73 -0.07	+0.08	-0.46
361	12.16 -0.57	16.15 -0.36	13.36 +0.50	1.05 +0.14	2.66 -0.08	0.04	0.47
362	11.59 -0.55	16.51 -0.34	12.86 +0.51	1.19 +0.13	2.58 -0.08	+0.01	0.47
363	11.04 -0.54	16.85 -0.32	12.35 +0.51	1.32 +0.13	2.50 -0.09	-0.03	0.47
364	10.50 -0.52	17.17 -0.30	11.84 +0.52	1.45 +0.12	2.41 -0.10	0.06	0.47
365	+ 9.98 -0.51	-17.47 -0.28	-11.32 +0.53	+1.57 +0.11	+2.31 -0.10	-0.10	-0.46
366	9.47 -0.50	17.75 -0.26	10.79 +0.53	1.68 +0.11	2.21 -0.10	0.13	0.46
367	8.97 -0.49	18.01 -0.25	10.26 +0.54	1.79 +0.11	2.11 -0.11	0.16	0.45
368	8.48 -0.47	18.26 -0.23	9.72 +0.55	1.90 +0.10	2.00 -0.11	0.19	0.44
369	8.01 -0.46	18.49 -0.21	9.17 +0.55	2.00 +0.09	1.89 -0.12	0.22	0.42
370	+ 7.55 -0.45	-18.70 -0.19	- 8.62 +0.55	+2.09 +0.08	+1.77 -0.12	-0.26	-0.40
371	7.10 -0.43	18.89 -0.17	8.07 +0.56	2.17 +0.08	1.65 -0.13	0.28	0.38
372	6.67 -0.42	19.06 -0.16	7.51 +0.56	2.25 +0.07	1.52 -0.12	0.31	0.36
373	6.25 -0.41	19.22 -0.14	6.95 +0.56	2.32 +0.06	1.40 -0.13	0.33	0.34
374	5.84 -0.40	19.36 -0.13	6.39 +0.57	2.38 +0.06	1.27 -0.14	0.36	0.32
375	+ 5.44 -0.39	-19.49 -0.11	- 5.82 +0.57	+2.44 +0.05	+1.13 -0.13	-0.38	-0.29
376	5.05 -0.38	19.60 -0.09	5.25 +0.57	2.49 +0.04	1.00 -0.14	0.40	0.27
377	4.67 -0.37	19.69 -0.08	4.68 +0.57	2.53 +0.04	0.86 -0.13	0.42	0.24
378	4.30 -0.36	19.77 -0.06	4.11 +0.57	2.57 +0.03	0.73 -0.14	0.44	0.21
379	3.94 -0.35	19.83 -0.05	3.54 +0.57	2.60 +0.02	0.59 -0.14	0.45	0.18
380	+ 3.59 -0.34	-19.88 -0.04	- 2.97 +0.57	+2.62 +0.02	+0.45 -0.14	-0.46	-0.14
381	3.25 -0.34	19.92 -0.02	2.40 +0.57	2.64 +0.01	0.31 -0.13	0.48	0.11
382	2.91 -0.33	19.94 -0.01	1.83 +0.57	2.65 +0.00	0.18 -0.14	0.48	0.08
383	2.58 -0.32	19.95 +0.01	1.26 +0.57	2.65 +0.00	+0.04 -0.14	0.49	0.04
384	2.26 -0.31	19.94 +0.02	0.69 +0.57	2.65 -0.01	-0.10 -0.14	0.49	-0.01
385	+ 1.95 -0.31	-19.92 +0.03	- 0.12 +0.56	+2.64 -0.02	-0.24 -0.13	-0.49	+0.03
386	1.64 -0.31	19.89 +0.05	+ 0.44 +0.56	2.62 -0.02	0.37 -0.14	0.49	0.06
387	1.33 -0.31	19.84 +0.06	1.00 +0.57	2.60 -0.03	0.51 -0.13	0.48	0.10
388	1.02 -0.30	19.78 +0.07	1.57 +0.56	2.57 -0.04	0.64 -0.13	0.48	0.13
389	0.72 -0.30	19.71 +0.08	2.13 +0.56	2.53 -0.04	0.77 -0.13	0.47	0.17
390	+ 0.42 -0.30	-19.63 +0.09	+ 2.69 +0.56	+2.49 -0.05	-0.90 -0.13	-0.45	+0.20
391	+ 0.12 -0.30	19.54 +0.11	3.25 +0.55	2.44 -0.06	1.03 -0.12	0.44	0.23
392	- 0.18 -0.30	19.43 +0.12	3.80 +0.55	2.38 -0.06	1.15 -0.13	0.42	0.26
393	0.48 -0.30	19.31 +0.13	4.35 +0.55	2.32 -0.06	1.28 -0.12	0.40	0.30
394	0.78 -0.30	19.18 +0.14	4.90 +0.55	2.26 -0.07	1.40 -0.12	0.38	0.33
395	- 1.08 -0.31	-19.04 +0.16	+ 5.45 +0.54	+2.19 -0.08	-1.52 -0.11	-0.35	+0.35
396	1.39 -0.31	18.88 +0.17	5.99 +0.54	2.11 -0.08	1.63 -0.11	0.33	0.38
397	1.70 -0.32	18.71 +0.19	6.53 +0.54	2.03 -0.09	1.74 -0.11	0.30	0.40
398	2.02 -0.33	18.52 +0.20	7.07 +0.53	1.94 -0.09	1.85 -0.10	0.27	0.42
399	2.35 -0.33	18.32 +0.20	7.60 +0.53	1.85 -0.10	1.95 -0.10	0.24	0.44
400	- 2.68 -0.34	-18.12 +0.22	+ 8.13 +0.53	+1.75 -0.10	-2.05 -0.09	-0.21	+0.46
401	3.02 -0.35	17.90 +0.24	8.66 +0.52	1.65 -0.11	2.14 -0.09	0.17	0.47
402	3.37 -0.35	17.66 +0.25	9.18 +0.51	1.54 -0.11	2.23 -0.09	0.14	0.48
403	3.72 -0.36	17.41 +0.26	9.69 +0.51	1.43 -0.12	2.32 -0.08	0.10	0.49
404	4.08 -0.36	17.15 +0.28	10.20 +0.50	1.31 -0.12	2.40 -0.07	0.07	0.50
405	- 4.44 -0.38	-16.87 +0.29	+10.70 +0.50	+1.19 -0.12	-2.47 -0.07	-0.03	+0.50
406	4.82 -0.39	16.58 +0.31	11.20 +0.49	1.07 -0.13	2.54 -0.07	+0.01	0.50
407	5.21 -0.40	16.27 +0.32	11.69 +0.48	0.94 -0.13	2.61 -0.06	0.04	0.50
408	5.61 -0.41	15.95 +0.34	12.17 +0.47	0.81 -0.14	2.67 -0.05	0.08	0.50
409	6.02 -0.43	15.61 +0.35	12.64 +0.47	0.67 -0.14	2.72 -0.05	0.12	0.49
410	- 6.45 -0.44	-15.26 +0.37	+13.11 +0.46	+0.53 -0.14	-2.77 -0.04	+0.16	+0.48
411	6.89 -0.45	14.89 +0.38	13.57 +0.45	0.39 -0.14	2.81 -0.03	0.19	0.47
412	7.34 -0.47	14.51 +0.40	14.02 +0.44	0.25 -0.15	2.84 -0.02	0.23	0.45
413	7.81 -0.48	14.11 +0.41	14.46 +0.43	+0.10 -0.15	2.86 -0.02	0.26	0.44
414	8.29 -0.49	13.70 +0.43	14.89 +0.42	-0.05 -0.15	2.88 -0.01	0.29	0.42
415	- 8.78 -0.50	-13.27 +0.44	+15.31 +0.41	-0.20 -0.15	-2.89 -0.01	+0.33	+0.39
416	9.28 -0.52	12.83 +0.46	15.72 +0.39	0.35 -0.16	2.90 0.00	0.35	0.37
417	9.80 -0.53	12.37 +0.48	16.11 +0.38	0.51 -0.15	2.90 +0.01	0.38	0.34
418	10.33 -0.54	11.89 +0.49	16.49 +0.37	0.66 -0.16	2.89 +0.02	0.41	0.31
419	10.87 -0.56	11.40 +0.51	16.86 +0.35	0.82 -0.15	2.87 +0.03	0.43	0.28
420	-11.43	-10.89	+17.21	-0.97	-2.84	+0.46	+0.25

TABLE V.—Arg. I. *Action of Neptune.*

Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(v. s. 3)	(v. c. 3)
	"	"	"	"	"	"	"
420	-11.43 -0.57	-10.89 +0.52	+17.21 +0.34	-0.97 -0.15	-2.84 +0.03	+0.46	+0.25
421	12.00 -0.59	10.37 +0.54	17.55 +0.32	1.12 -0.15	2.81 +0.05	0.47	0.21
422	12.59 -0.60	9.83 +0.56	17.87 +0.30	1.27 -0.16	2.76 +0.05	0.49	0.18
423	13.19 -0.61	9.27 +0.57	18.17 +0.29	1.43 -0.15	2.71 +0.06	0.50	0.14
424	13.80 -0.62	8.70 +0.58	18.46 +0.27	1.58 -0.15	2.65 +0.07	0.51	0.10
425	-14.42 -0.64	-8.12 +0.60	+18.73 +0.25	-1.73 -0.14	-2.58 +0.07	+0.52	+0.06
426	15.06 -0.65	7.52 +0.62	18.98 +0.23	1.87 -0.15	2.51 +0.08	0.52	+0.02
427	15.71 -0.67	6.90 +0.63	19.21 +0.21	2.02 -0.14	2.43 +0.09	0.52	-0.02
428	16.38 -0.68	6.27 +0.64	19.42 +0.19	2.16 -0.13	2.34 +0.10	0.52	0.06
429	17.06 -0.69	5.63 +0.65	19.61 +0.17	2.29 -0.13	2.24 +0.11	0.52	0.10
430	-17.75 -0.70	-4.98 +0.66	+19.78 +0.15	-2.42 -0.12	-2.13 +0.11	+0.51	-0.14
431	18.45 -0.71	4.32 +0.68	19.93 +0.12	2.54 -0.12	2.02 +0.12	0.50	0.18
432	19.16 -0.72	3.64 +0.69	20.05 +0.10	2.66 -0.11	1.90 +0.13	0.49	0.21
433	19.88 -0.73	2.95 +0.70	20.15 +0.08	2.77 -0.11	1.77 +0.14	0.47	0.25
434	20.61 -0.74	2.25 +0.71	20.23 +0.05	2.88 -0.10	1.63 +0.14	0.45	0.29
435	-21.35 -0.76	-1.54 +0.72	+20.28 +0.02	-2.98 -0.09	-1.49 +0.15	+0.43	-0.33
436	22.11 -0.76	0.82 +0.72	20.30 0.00	3.07 -0.09	1.34 +0.15	0.41	0.36
437	22.87 -0.77	-0.10 +0.73	20.30 -0.02	3.16 -0.08	1.19 +0.16	0.38	0.39
438	23.64 -0.78	+0.63 +0.74	20.28 -0.05	3.24 -0.06	1.03 +0.17	0.35	0.42
439	24.42 -0.78	1.37 +0.74	20.23 -0.08	3.30 -0.06	0.86 +0.17	0.32	0.45
440	-25.20 -0.79	+2.11 +0.75	+20.15 -0.10	-3.36 -0.05	-0.69 +0.17	+0.28	-0.47
441	25.99 -0.80	2.86 +0.75	20.05 -0.13	3.41 -0.04	0.52 +0.18	0.25	0.49
442	26.79 -0.80	3.61 +0.75	19.92 -0.16	3.45 -0.03	0.34 +0.18	0.21	0.51
443	27.59 -0.81	4.36 +0.76	19.76 -0.18	3.48 -0.02	-0.16 +0.19	0.17	0.53
444	28.40 -0.81	5.12 +0.76	19.58 -0.21	3.50 -0.01	+0.03 +0.18	0.13	0.54
445	-29.21 -0.81	+5.88 +0.76	+19.37 -0.24	-3.51 0.00	+0.21 +0.19	+0.09	-0.55
446	30.02 -0.82	6.64 +0.75	19.13 -0.27	3.51 +0.01	0.40 +0.19	+0.04	0.56
447	30.84 -0.82	7.39 +0.75	18.86 -0.30	3.50 +0.02	0.59 +0.19	0.00	0.57
448	31.66 -0.83	8.14 +0.75	18.56 -0.32	3.48 +0.03	0.78 +0.18	-0.04	0.57
449	32.49 -0.83	8.89 +0.74	18.24 -0.35	3.45 +0.05	0.96 +0.19	0.08	0.56
450	-33.32 -0.83	+9.63 +0.74	+17.89 -0.38	-3.40 +0.06	+1.15 +0.19	-0.13	-0.56
451	34.15 -0.83	10.37 +0.73	17.51 -0.41	3.34 +0.07	1.34 +0.18	0.17	0.55
452	34.98 -0.83	11.10 +0.72	17.10 -0.43	3.27 +0.08	1.52 +0.18	0.21	0.54
453	35.81 -0.82	11.82 +0.71	16.67 -0.46	3.19 +0.09	1.70 +0.18	0.25	0.52
454	36.63 -0.82	12.53 +0.70	16.21 -0.48	3.10 +0.10	1.88 +0.18	0.29	0.50
455	-37.45 -0.82	+13.23 +0.69	+15.73 -0.51	-3.00 +0.11	+2.06 +0.17	-0.33	-0.48
456	38.27 -0.82	13.92 +0.68	15.22 -0.54	2.89 +0.12	2.23 +0.16	0.36	0.45
457	39.09 -0.82	14.60 +0.67	14.68 -0.56	2.77 +0.13	2.39 +0.15	0.40	0.43
458	39.91 -0.81	15.27 +0.65	14.12 -0.58	2.64 +0.14	2.54 +0.15	0.43	0.40
459	40.72 -0.81	15.92 +0.63	13.54 -0.61	2.50 +0.15	2.69 +0.14	0.46	0.36
460	-41.53 -0.80	+16.55 +0.62	+12.93 -0.63	-2.35 +0.16	+2.83 +0.14	-0.49	-0.33
461	42.33 -0.80	17.17 +0.60	12.30 -0.66	2.19 +0.17	2.97 +0.13	0.52	0.29
462	43.13 -0.79	17.77 +0.59	11.64 -0.68	2.02 +0.18	3.10 +0.12	0.54	0.25
463	43.92 -0.78	18.36 +0.56	10.96 -0.69	1.84 +0.18	3.22 +0.11	0.56	0.21
464	44.70 -0.77	18.92 +0.54	10.27 -0.72	1.66 +0.19	3.33 +0.10	0.57	0.17
465	-45.47 -0.77	+19.46 +0.53	+9.55 -0.74	-1.47 +0.20	+3.43 +0.08	-0.59	-0.12
466	46.24 -0.76	19.99 +0.50	8.81 -0.75	1.27 +0.20	3.51 +0.07	0.60	0.08
467	47.00 -0.75	20.49 +0.48	8.06 -0.77	1.07 +0.21	3.58 +0.07	0.60	-0.03
468	47.75 -0.73	20.97 +0.45	7.29 -0.79	0.86 +0.21	3.65 +0.06	0.60	+0.01
469	48.48 -0.73	21.42 +0.43	6.50 -0.81	0.65 +0.22	3.71 +0.04	0.60	0.06
470	-49.21 -0.72	+21.85 +0.41	+5.69 -0.82	-0.43 +0.22	+3.75 +0.03	-0.60	+0.10
471	49.93 -0.70	22.26 +0.38	4.87 -0.83	-0.21 +0.22	3.78 +0.02	0.59	0.15
472	50.63 -0.69	22.64 +0.35	4.04 -0.85	+0.01 +0.22	3.80 0.00	0.58	0.20
473	51.32 -0.68	22.99 +0.33	3.19 -0.86	0.23 +0.23	3.80 0.00	0.56	0.24
474	52.00 -0.66	23.32 +0.30	2.33 -0.87	0.46 +0.22	3.80 -0.02	0.54	0.28
475	-52.66 -0.65	+23.62 +0.27	+1.46 -0.88	+0.68 +0.23	+3.78 -0.03	-0.52	+0.33
476	53.31 -0.63	23.89 +0.25	+0.58 -0.89	0.91 +0.22	3.75 -0.05	0.49	0.37
477	53.94 -0.62	24.14 +0.22	-0.31 -0.90	1.13 +0.23	3.70 -0.05	0.46	0.40
478	54.56 -0.60	24.36 +0.19	1.21 -0.91	1.36 +0.22	3.65 -0.07	0.43	0.44
479	55.16 -0.59	24.55 +0.15	2.12 -0.91	1.58 +0.21	3.58 -0.08	0.40	0.47
480	-55.75	+24.70	-3.03	+1.79	+3.50	-0.36	+0.50

TABLE V.—Arg. 1. *Action of Neptune.*

Arg.	(v. c. 0)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(v. s. 3)	(v. c. 3)
	"	"	"	"	"	"	"
480	-55.75 -0.57	+24.70 +0.13	-3.03 -0.91	+1.79 +0.21	+3.50 -0.10	-0.36	+0.50
481	56.32 -0.55	24.83 +0.10	3.94 -0.91	2.00 +0.21	3.40 -0.10	0.32	0.53
482	56.87 -0.53	24.93 +0.07	4.85 -0.92	2.21 +0.20	3.30 -0.12	0.28	0.56
483	57.40 -0.52	25.00 +0.04	5.77 -0.92	2.41 +0.20	3.18 -0.13	0.24	0.58
484	57.92 -0.50	25.04 +0.01	6.69 -0.92	2.61 +0.19	3.05 -0.14	0.19	0.60
485	-58.42 -0.48	+25.05 -0.02	-7.61 -0.92	+2.80 +0.18	+2.91 -0.14	-0.15	+0.61
486	58.90 -0.46	25.03 -0.05	8.53 -0.91	2.98 +0.17	2.77 -0.16	0.10	0.62
487	59.36 -0.44	24.98 -0.08	9.44 -0.91	3.15 +0.17	2.61 -0.17	-0.05	0.63
488	59.80 -0.41	24.90 -0.11	10.35 -0.90	3.32 +0.16	2.44 -0.18	0.00	0.64
489	60.21 -0.39	24.79 -0.15	11.25 -0.90	3.48 +0.14	2.26 -0.19	+0.05	0.64
490	-60.60 -0.37	+24.64 -0.17	-12.15 -0.89	+3.62 +0.14	+2.07 -0.19	+0.10	+0.64
491	60.97 -0.36	24.47 -0.20	13.04 -0.87	3.76 +0.13	1.88 -0.20	0.14	0.63
492	61.33 -0.33	24.27 -0.23	13.91 -0.87	3.89 +0.11	1.68 -0.21	0.19	0.62
493	61.66 -0.31	24.04 -0.26	14.78 -0.86	4.00 +0.10	1.47 -0.21	0.24	0.60
494	61.97 -0.29	23.78 -0.29	15.64 -0.85	4.10 +0.10	1.26 -0.21	0.28	0.58
495	-62.26 -0.26	+23.49 -0.32	-16.49 -0.83	+4.20 +0.08	+1.05 -0.22	+0.33	+0.56
496	62.52 -0.24	23.17 -0.34	17.32 -0.82	4.28 +0.06	0.83 -0.23	0.37	0.54
497	62.76 -0.21	22.83 -0.37	18.14 -0.80	4.34 +0.06	0.60 -0.23	0.41	0.51
498	62.97 -0.19	22.46 -0.40	18.94 -0.78	4.40 +0.04	0.37 -0.23	0.45	0.48
499	63.16 -0.16	22.06 -0.43	19.72 -0.77	4.44 +0.03	+0.14 -0.24	0.49	0.45
500	-63.32 -0.14	-21.63 -0.45	-20.49 -0.75	+4.47 +0.02	-0.10 -0.23	+0.53	+0.41
501	63.46 -0.12	21.18 -0.48	21.24 -0.72	4.49 0.00	0.33 -0.24	0.56	0.37
502	63.58 -0.09	20.70 -0.50	21.96 -0.70	4.49 -0.01	0.57 -0.23	0.59	0.33
503	63.67 -0.07	20.20 -0.53	22.66 -0.69	4.48 -0.02	0.80 -0.24	0.61	0.29
504	63.74 -0.04	19.67 -0.55	23.35 -0.67	4.46 -0.03	1.04 -0.24	0.63	0.24
505	-63.78 -0.02	+19.12 -0.57	-24.02 -0.64	+4.43 -0.05	-1.28 -0.23	+0.65	+0.20
506	63.80 0.00	18.55 -0.59	24.66 -0.61	4.38 -0.06	1.51 -0.23	0.67	0.15
507	63.80 +0.03	17.96 -0.61	25.27 -0.59	4.32 -0.07	1.74 -0.22	0.68	0.10
508	63.77 +0.06	17.35 -0.64	25.86 -0.56	4.25 -0.08	1.96 -0.22	0.68	+0.05
509	63.71 +0.08	16.71 -0.65	26.42 -0.53	4.17 -0.10	2.18 -0.21	0.69	0.00
510	-63.63 +0.11	+16.06 -0.67	-26.95 -0.51	+4.07 -0.11	-2.39 -0.21	+0.69	-0.05
511	63.52 +0.13	15.39 -0.69	27.46 -0.48	3.96 -0.12	2.60 -0.20	0.69	0.10
512	63.39 +0.16	14.70 -0.71	27.94 -0.45	3.84 -0.12	2.80 -0.19	0.68	0.14
513	63.23 +0.18	13.99 -0.72	28.39 -0.42	3.72 -0.14	2.99 -0.18	0.67	0.19
514	63.05 +0.21	13.27 -0.73	28.81 -0.39	3.58 -0.15	3.17 -0.18	0.66	0.24
515	-62.84 +0.23	+12.54 -0.74	-29.20 -0.36	+3.43 -0.15	-3.35 -0.17	+0.64	-0.29
516	62.61 +0.25	11.80 -0.76	29.56 -0.33	3.28 -0.17	3.52 -0.16	0.62	0.33
517	62.36 +0.28	11.04 -0.77	29.89 -0.30	3.11 -0.18	3.68 -0.15	0.60	0.37
518	62.08 +0.31	10.27 -0.78	30.19 -0.26	2.93 -0.18	3.83 -0.14	0.57	0.41
519	61.77 +0.33	9.49 -0.79	30.45 -0.23	2.75 -0.19	3.97 -0.13	0.54	0.45
520	-61.44 +0.35	+8.70 -0.79	-30.68 -0.20	+2.56 -0.20	-4.10 -0.11	+0.50	-0.49
521	61.09 +0.38	7.91 -0.80	30.88 -0.17	2.36 -0.20	4.21 -0.11	0.47	0.52
522	60.71 +0.40	7.11 -0.80	31.05 -0.13	2.16 -0.21	4.32 -0.10	0.43	0.55
523	60.31 +0.42	6.31 -0.81	31.18 -0.10	1.95 -0.21	4.42 -0.08	0.39	0.58
524	59.89 +0.45	5.50 -0.81	31.28 -0.07	1.74 -0.21	4.50 -0.07	0.35	0.61
525	-59.44 +0.47	+4.69 -0.81	-31.35 -0.04	+1.53 -0.22	-4.57 -0.06	+0.31	-0.63
526	58.97 +0.49	3.88 -0.81	31.39 -0.01	1.31 -0.22	4.63 -0.05	0.26	0.65
527	58.48 +0.52	3.07 -0.81	31.40 +0.03	1.09 -0.22	4.68 -0.03	0.22	0.66
528	57.96 +0.54	2.26 -0.81	31.37 +0.06	0.87 -0.22	4.71 -0.02	0.17	0.67
529	57.42 +0.56	1.45 -0.81	31.31 +0.09	0.65 -0.23	4.73 -0.01	0.12	0.68
530	-56.86 +0.58	+0.64 -0.81	-31.22 +0.12	+0.42 -0.22	-4.74 0.00	+0.08	-0.69
531	56.28 +0.61	-0.17 -0.80	31.10 +0.15	+0.20 -0.23	4.74 +0.01	+0.03	0.69
532	55.67 +0.62	0.97 -0.79	30.95 +0.18	-0.03 -0.22	4.73 +0.03	-0.02	0.69
533	55.05 +0.64	1.76 -0.78	30.77 +0.22	0.25 -0.21	4.70 +0.04	0.06	0.68
534	54.41 +0.67	2.54 -0.77	30.55 +0.25	0.46 -0.22	4.66 +0.05	0.10	0.67
535	-53.74 +0.68	-3.31 -0.77	-30.30 +0.28	-0.68 -0.21	-4.61 +0.06	-0.15	-0.66
536	53.06 +0.70	4.08 -0.76	30.02 +0.30	0.89 -0.21	4.55 +0.08	0.20	0.64
537	52.36 +0.72	4.84 -0.74	29.72 +0.33	1.10 -0.20	4.47 +0.08	0.24	0.62
538	51.64 +0.74	5.58 -0.73	29.39 +0.36	1.30 -0.20	4.39 +0.10	0.28	0.60
539	50.90 +0.77	6.31 -0.72	29.03 +0.39	1.50 -0.19	4.29 +0.10	0.32	0.58
540	-50.13	-7.03	-28.64	-1.69	-4.19	-0.35	-0.55

TABLE V.—Arg. 1. *Action of Neptune.*

Arg.	(v. c. 0)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(v. s. 3)	(v. c. 3)
	"	"	"	"	"	"	"
540	-50.13 +0.78	-7.03 -0.71	-28.64 +0.41	-1.69 -0.18	-4.19 +0.12	-0.35	-0.55
541	49.35 +0.79	7.74 -0.69	28.23 +0.44	1.87 -0.18	4.07 +0.13	0.39	0.52
542	48.56 +0.81	8.43 -0.67	27.79 +0.47	2.05 -0.17	3.94 +0.13	0.42	0.49
543	47.75 +0.82	9.10 -0.66	27.32 +0.49	2.22 -0.16	3.81 +0.14	0.45	0.46
544	46.93 +0.84	9.76 -0.64	26.83 +0.51	2.38 -0.15	3.67 +0.15	0.47	0.42
545	-46.09 +0.86	-10.40 -0.62	-26.32 +0.53	-2.53 -0.14	-3.52 +0.16	-0.50	-0.38
546	45.23 +0.87	11.02 -0.60	25.79 +0.56	2.67 -0.13	3.36 +0.17	0.52	0.34
547	44.36 +0.88	11.62 -0.58	25.23 +0.58	2.80 -0.13	3.19 +0.17	0.54	0.30
548	43.48 +0.90	12.20 -0.57	24.65 +0.60	2.93 -0.12	3.02 +0.18	0.55	0.26
549	42.58 +0.92	12.77 -0.54	24.05 +0.62	3.05 -0.11	2.84 +0.18	0.56	0.22
550	-41.66 +0.92	-13.31 -0.52	-23.43 +0.63	-3.16 -0.10	-2.66 +0.19	-0.57	-0.18
551	40.74 +0.93	13.83 -0.50	22.80 +0.65	3.26 -0.08	2.47 +0.19	0.57	0.14
552	39.81 +0.95	14.33 -0.48	22.15 +0.66	3.34 -0.07	2.28 +0.20	0.58	0.09
553	38.86 +0.96	14.81 -0.46	21.49 +0.69	3.41 -0.06	2.08 +0.20	0.58	0.05
554	37.90 +0.97	15.27 -0.43	20.80 +0.70	3.47 -0.05	1.88 +0.20	0.57	-0.01
555	-36.93 +0.98	-15.70 -0.41	-20.10 +0.71	-3.52 -0.04	-1.68 +0.20	-0.56	+0.03
556	35.95 +0.98	16.11 -0.38	19.39 +0.72	3.56 -0.03	1.48 +0.20	0.55	0.07
557	34.97 +0.99	16.49 -0.36	18.67 +0.73	3.59 -0.02	1.28 +0.20	0.54	0.11
558	33.98 +1.00	16.85 -0.34	17.94 +0.75	3.61 -0.01	1.08 +0.20	0.53	0.15
559	32.98 +1.01	17.19 -0.31	17.19 +0.75	3.62 0.00	0.88 +0.20	0.51	0.18
560	-31.97 +1.01	-17.50 -0.29	-16.44 +0.76	-3.62 +0.01	-0.68 +0.20	-0.49	+0.22
561	30.96 +1.02	17.79 -0.26	15.68 +0.77	3.61 +0.02	0.48 +0.20	0.46	0.25
562	29.94 +1.02	18.05 -0.24	14.91 +0.77	3.59 +0.04	0.28 +0.19	0.44	0.28
563	28.92 +1.03	18.29 -0.21	14.14 +0.78	3.55 +0.05	-0.09 +0.19	0.41	0.31
564	27.89 +1.03	18.50 -0.19	13.36 +0.78	3.50 +0.05	+0.10 +0.18	0.38	0.34
565	-26.86 +1.03	-18.69 -0.17	-12.58 +0.79	-3.45 +0.06	+0.28 +0.19	-0.35	+0.36
566	25.83 +1.04	18.86 -0.14	11.79 +0.79	3.39 +0.08	0.47 +0.18	0.32	0.38
567	24.79 +1.04	19.00 -0.11	11.00 +0.78	3.31 +0.08	0.65 +0.17	0.28	0.40
568	23.75 +1.04	19.11 -0.09	10.22 +0.78	3.23 +0.09	0.82 +0.16	0.25	0.42
569	22.71 +1.04	19.20 -0.07	9.44 +0.79	3.14 +0.10	0.98 +0.16	0.22	0.43
570	-21.67 +1.04	-19.27 -0.04	-8.65 +0.78	-3.04 +0.10	+1.14 +0.15	-0.18	+0.44
571	20.63 +1.04	19.31 -0.02	7.87 +0.78	2.94 +0.11	1.29 +0.15	0.14	0.45
572	19.59 +1.04	19.33 0.00	7.09 +0.78	2.83 +0.12	1.44 +0.14	0.11	0.45
573	18.55 +1.04	19.33 +0.03	6.31 +0.77	2.71 +0.12	1.58 +0.13	0.07	0.45
574	17.51 +1.03	19.30 +0.05	5.54 +0.77	2.59 +0.13	1.71 +0.12	-0.03	0.45
575	-16.48 +1.03	-19.25 +0.07	-4.77 +0.76	-2.46 +0.13	+1.83 +0.11	0.00	+0.45
576	15.45 +1.02	19.18 +0.09	4.01 +0.75	2.33 +0.14	1.94 +0.11	+0.03	0.44
577	14.43 +1.02	19.09 +0.11	3.26 +0.74	2.19 +0.14	2.05 +0.10	0.07	0.44
578	13.41 +1.02	18.98 +0.14	2.52 +0.74	2.05 +0.15	2.15 +0.09	0.10	0.43
579	12.39 +1.01	18.84 +0.16	1.78 +0.72	1.90 +0.15	2.24 +0.08	0.13	0.41
580	-11.38 +1.01	-18.68 +0.18	-1.06 +0.71	-1.75 +0.15	+2.32 +0.07	+0.16	+0.39
581	10.37 +1.00	18.50 +0.19	0.35 +0.70	1.60 +0.15	2.39 +0.06	0.19	0.38
582	9.37 +0.99	18.31 +0.21	0.35 +0.69	1.45 +0.16	2.45 +0.05	0.22	0.36
583	8.38 +0.98	18.10 +0.24	1.04 +0.68	1.29 +0.16	2.50 +0.05	0.24	0.34
584	7.40 +0.97	17.86 +0.25	1.72 +0.66	1.13 +0.16	2.55 +0.04	0.26	0.32
585	-6.43 +0.96	-17.61 +0.27	+2.38 +0.65	-0.97 +0.15	+2.59 +0.03	+0.28	+0.29
586	5.47 +0.96	17.34 +0.28	3.03 +0.64	0.82 +0.16	2.62 +0.01	0.30	0.27
587	4.51 +0.95	17.06 +0.30	3.67 +0.62	0.66 +0.15	2.63 +0.01	0.32	0.24
588	3.56 +0.93	16.76 +0.32	4.29 +0.60	0.51 +0.15	2.64 0.00	0.33	0.21
589	2.63 +0.92	16.44 +0.33	4.89 +0.59	0.36 +0.15	2.64 -0.01	0.35	0.18
590	-1.71 +0.91	-16.11 +0.34	+5.48 +0.57	-0.21 +0.15	+2.63 -0.01	+0.36	+0.16
591	-0.80 +0.90	15.77 +0.35	6.05 +0.55	-0.06 +0.15	2.62 -0.02	0.36	0.13
592	+0.10 +0.89	15.42 +0.37	6.60 +0.53	+0.09 +0.14	2.60 -0.04	0.37	0.10
593	0.99 +0.87	15.05 +0.38	7.13 +0.52	0.23 +0.14	2.56 -0.04	0.37	0.07
594	1.86 +0.86	14.67 +0.39	7.65 +0.50	0.37 +0.13	2.52 -0.05	0.38	0.04
595	+2.72 +0.84	-14.28 +0.40	+8.15 +0.49	+0.50 +0.13	+2.47 -0.05	+0.38	+0.02
596	3.56 +0.83	13.88 +0.41	8.64 +0.46	0.63 +0.13	2.42 -0.06	0.37	-0.01
597	4.39 +0.82	13.47 +0.42	9.10 +0.44	0.76 +0.12	2.36 -0.06	0.37	0.04
598	5.21 +0.80	13.05 +0.42	9.54 +0.42	0.88 +0.11	2.30 -0.07	0.36	0.07
599	6.01 +0.78	12.63 +0.43	9.96 +0.41	0.99 +0.11	2.23 -0.08	0.35	0.09
600	+6.79	-12.20	+10.37	+1.10	+2.15	+0.34	-0.12

TABLE VI.—Arg. 2. *Action of Saturn.*

Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(v. s. 3)	(v. c. 3)	(v. s. 4)	(v. c. 4)	(v. s. 5)	(v. c. 5)
	"	"	"	"	"	"	"	"	"	"	"
0	-17.70 +0.21	-0.75	+2.70	-0.16	+0.13	-7.15	+1.18	-0.30	+0.19	-0.05	0.00
1	17.49 +0.22	0.71	2.75	0.16	0.14	7.16	1.28	0.29	0.20	0.05	0.00
2	17.27 +0.23	0.67	2.80	0.16	0.14	7.17	1.38	0.29	0.20	0.05	+0.01
3	17.04 +0.22	0.63	2.84	0.16	0.15	7.18	1.48	0.29	0.20	0.05	0.01
4	16.82 +0.23	0.58	2.89	0.16	0.16	7.19	1.57	0.29	0.21	0.05	0.01
5	-16.59 +0.22	-0.54	+2.94	-0.16	+0.16	-7.19	+1.67	-0.28	+0.21	-0.05	+0.01
6	16.37 +0.23	0.49	2.99	0.16	0.17	7.19	1.77	0.28	0.21	0.05	0.01
7	16.14 +0.23	0.45	3.03	0.16	0.18	7.20	1.87	0.28	0.22	0.05	0.01
8	15.91 +0.24	0.40	3.08	0.16	0.18	7.20	1.97	0.28	0.22	0.05	0.01
9	15.67 +0.23	0.36	3.13	0.16	0.19	7.19	2.08	0.27	0.22	0.05	0.01
10	-15.44 +0.24	-0.31	+3.17	-0.16	+0.20	-7.18	+2.18	-0.27	+0.23	-0.05	+0.01
11	15.20 +0.23	0.27	3.22	0.16	0.20	7.18	2.28	0.27	0.23	0.05	0.01
12	14.97 +0.24	0.22	3.26	0.15	0.21	7.17	2.38	0.26	0.23	0.05	0.01
13	14.73 +0.24	0.17	3.30	0.15	0.22	7.16	2.49	0.26	0.24	0.05	0.01
14	14.49 +0.25	0.13	3.34	0.15	0.22	7.15	2.59	0.26	0.24	0.05	0.02
15	-14.24 +0.24	-0.08	+3.38	-0.15	+0.23	-7.14	+2.69	-0.26	+0.24	-0.05	+0.02
16	14.00 +0.25	-0.03	3.42	0.15	0.24	7.13	2.79	0.25	0.24	0.05	0.02
17	13.75 +0.24	+0.02	3.46	0.14	0.24	7.12	2.90	0.25	0.25	0.05	0.02
18	13.51 +0.25	0.06	3.50	0.14	0.25	7.10	3.00	0.25	0.25	0.04	0.02
19	13.26 +0.25	0.11	3.54	0.14	0.26	7.08	3.11	0.24	0.25	0.04	0.02
20	-13.01 +0.25	+0.16	+3.57	-0.14	+0.26	-7.06	+3.21	-0.24	+0.26	-0.04	+0.02
21	12.76 +0.25	0.21	3.61	0.14	0.27	7.04	3.32	0.24	0.26	0.04	0.02
22	12.51 +0.25	0.26	3.64	0.13	0.27	7.01	3.42	0.24	0.26	0.04	0.02
23	12.26 +0.25	0.31	3.68	0.13	0.28	6.99	3.52	0.23	0.27	0.04	0.02
24	12.01 +0.25	0.36	3.71	0.13	0.28	6.96	3.63	0.23	0.27	0.04	0.02
25	-11.76 +0.26	+0.41	+3.74	-0.12	+0.29	-6.93	+3.73	-0.23	+0.27	-0.04	+0.02
26	11.50 +0.25	0.46	3.77	0.12	0.30	6.90	3.83	0.22	0.28	0.04	0.02
27	11.25 +0.25	0.51	3.80	0.12	0.30	6.87	3.94	0.22	0.28	0.04	0.02
28	11.00 +0.26	0.55	3.83	0.11	0.31	6.83	4.04	0.22	0.28	0.04	0.03
29	10.74 +0.26	0.60	3.86	0.11	0.31	6.80	4.14	0.22	0.28	0.04	0.03
30	-10.48 +0.25	+0.65	+3.88	-0.10	+0.32	-6.76	+4.25	-0.21	+0.28	-0.04	+0.03
31	10.23 +0.26	0.70	3.91	0.10	0.32	6.72	4.35	0.21	0.29	0.04	0.03
32	9.97 +0.26	0.75	3.94	0.10	0.33	6.68	4.45	0.21	0.29	0.04	0.03
33	9.71 +0.25	0.80	3.96	0.09	0.33	6.64	4.55	0.20	0.29	0.04	0.03
34	9.46 +0.26	0.85	3.98	0.09	0.34	6.59	4.65	0.20	0.30	0.04	0.03
35	-9.20 +0.26	+0.90	+4.00	-0.08	+0.34	-6.55	+4.75	-0.20	+0.30	-0.04	+0.03
36	8.94 +0.26	0.94	4.02	0.08	0.35	6.50	4.85	0.19	0.30	0.04	0.03
37	8.68 +0.26	0.99	4.04	0.07	0.35	6.45	4.95	0.19	0.30	0.04	0.03
38	8.42 +0.26	1.04	4.05	0.07	0.36	6.40	5.05	0.19	0.31	0.04	0.03
39	8.16 +0.25	1.09	4.07	0.06	0.36	6.35	5.15	0.18	0.31	0.04	0.03
40	-7.91 +0.26	+1.14	+4.08	-0.06	+0.37	-6.29	+5.25	-0.18	+0.31	-0.04	+0.04
41	7.65 +0.26	1.18	4.09	0.05	0.37	6.23	5.35	0.18	0.32	0.04	0.04
42	7.39 +0.26	1.23	4.10	0.05	0.37	6.17	5.45	0.18	0.32	0.04	0.04
43	7.13 +0.25	1.28	4.11	0.04	0.37	6.11	5.55	0.17	0.32	0.04	0.04
44	6.88 +0.26	1.32	4.12	0.04	0.38	6.05	5.65	0.17	0.32	0.03	0.04
45	-6.62 +0.26	+1.37	+4.13	-0.03	+0.38	-5.99	+5.74	-0.16	+0.32	-0.03	+0.04
46	6.36 +0.25	1.42	4.13	0.03	0.38	5.92	5.84	0.16	0.32	0.03	0.04
47	6.11 +0.26	1.46	4.13	0.02	0.38	5.86	5.93	0.16	0.33	0.03	0.04
48	5.85 +0.25	1.51	4.14	0.02	0.38	5.79	6.02	0.16	0.33	0.03	0.04
49	5.60 +0.25	1.55	4.14	0.01	0.38	5.72	6.11	0.15	0.33	0.03	0.04
50	-5.35 +0.25	+1.60	+4.14	-0.01	+0.38	-5.65	+6.21	-0.15	+0.33	-0.03	+0.04
51	5.10 +0.26	1.64	4.14	0.00	0.38	5.58	6.30	0.15	0.33	0.03	0.04
52	4.84 +0.25	1.68	4.13	+0.01	0.38	5.50	6.39	0.14	0.34	0.03	0.04
53	4.59 +0.25	1.73	4.13	0.01	0.38	5.43	6.48	0.14	0.34	0.03	0.04
54	4.34 +0.24	1.77	4.12	0.02	0.38	5.35	6.56	0.14	0.34	0.03	0.04
55	-4.10 +0.25	+1.81	+4.11	+0.02	+0.38	-5.27	+6.65	-0.13	+0.34	-0.03	+0.04
56	3.85 +0.24	1.85	4.10	0.03	0.38	5.19	6.73	0.13	0.34	0.03	0.04
57	3.61 +0.25	1.89	4.08	0.03	0.38	5.10	6.82	0.13	0.34	0.03	0.04
58	3.36 +0.24	1.93	4.07	0.04	0.38	5.02	6.90	0.12	0.34	0.02	0.04
59	3.12 +0.24	1.97	4.05	0.04	0.38	4.93	6.98	0.12	0.35	0.02	0.05
60	-2.88	+2.01	+4.03	+0.05	+0.38	-4.85	+7.06	-0.12	+0.35	-0.02	+0.05

TABLE VI.—Arg. 2. *Action of Saturn.*

Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(v. s. 3)	(v. c. 3)	(v. s. 4)	(v. c. 4)	(v. s. 5)	(v. c. 5)
	"	"	"	"	"	"	"	"	"	"	"
60	-2.88	+2.01	+4.03	+0.05	+0.38	-4.85	+7.06	-0.12	+0.35	-0.02	+0.05
61	2.64 +0.24	2.05	4.01	+0.05	0.38	4.76	7.14	0.11	0.35	0.02	0.05
62	2.40 +0.24	2.09	3.99	0.06	0.38	4.67	7.22	0.11	0.35	0.02	0.05
63	2.16 +0.24	2.12	3.97	0.06	0.37	4.58	7.29	0.11	0.35	0.02	0.05
64	1.93 +0.23	2.15	3.94	0.06	0.37	4.49	7.37	0.10	0.35	0.02	0.05
	+0.24										
65	-1.69	+2.19	+3.92	+0.07	+0.37	-4.39	+7.45	-0.10	+0.35	-0.02	+0.05
66	1.46 +0.23	2.22	3.89	+0.08	0.36	4.30	7.52	0.10	0.35	0.02	0.05
67	1.24 +0.22	2.25	3.86	0.08	0.36	4.20	7.59	0.09	0.35	0.02	0.05
68	1.01 +0.23	2.28	3.83	0.08	0.36	4.10	7.66	0.09	0.35	0.02	0.05
69	0.78 +0.23	2.31	3.79	0.09	0.35	4.00	7.73	0.09	0.35	0.02	0.05
	+0.22										
70	-0.56	+2.34	+3.76	+0.09	+0.35	-3.90	+7.80	-0.08	+0.36	-0.02	+0.05
71	0.34 +0.22	2.37	3.72	0.10	0.34	3.80	7.86	0.08	0.36	0.02	0.05
72	-0.12 +0.22	2.39	3.68	0.10	0.34	3.70	7.93	0.08	0.36	0.02	0.05
73	+0.10 +0.22	2.42	3.64	0.10	0.33	3.60	7.99	0.07	0.36	0.02	0.05
74	0.32 +0.21	2.44	3.60	0.11	0.33	3.49	8.05	0.07	0.36	0.01	0.05
	+0.21										
75	+0.53	+2.47	+3.56	+0.11	+0.32	-3.39	+8.11	-0.06	+0.36	-0.01	+0.05
76	0.74 +0.21	2.49	3.51	0.11	0.31	3.28	8.17	0.06	0.36	0.01	0.05
77	0.95 +0.21	2.51	3.46	0.11	0.31	3.17	8.22	0.06	0.36	0.01	0.05
78	1.16 +0.21	2.53	3.41	0.12	0.30	3.06	8.27	0.06	0.36	0.01	0.05
79	1.36 +0.20	2.55	3.36	0.12	0.30	2.95	8.33	0.05	0.36	0.01	0.05
	+0.20										
80	+1.56	+2.56	+3.31	+0.12	+0.29	-2.84	+8.38	-0.05	+0.36	-0.01	+0.05
81	1.75 +0.19	2.58	3.26	0.12	0.29	2.73	8.43	0.04	0.36	0.01	0.05
82	1.95 +0.20	2.59	3.20	0.13	0.28	2.61	8.47	0.04	0.36	0.01	0.05
83	2.14 +0.19	2.61	3.15	0.13	0.27	2.50	8.52	0.04	0.36	-0.01	0.05
84	2.33 +0.19	2.62	3.09	0.13	0.26	2.38	8.57	0.03	0.36	0.00	0.05
	+0.19										
85	+2.52	+2.63	+3.02	+0.13	+0.26	-2.26	+8.62	-0.03	+0.36	0.00	+0.05
86	2.71 +0.19	2.63	2.96	0.13	0.25	2.15	8.66	0.03	0.36	0.00	0.05
87	2.89 +0.18	2.64	2.90	0.13	0.24	2.03	8.70	0.02	0.36	0.00	0.05
88	3.07 +0.18	2.64	2.83	0.13	0.23	1.91	8.73	0.02	0.36	0.00	0.05
89	3.25 +0.17	2.65	2.77	0.13	0.22	1.79	8.77	0.02	0.36	0.00	0.05
	+0.17										
90	+3.42	+2.65	+2.70	+0.13	+0.22	-1.67	+8.80	-0.01	+0.36	0.00	+0.05
91	3.59 +0.17	2.65	2.64	0.13	0.21	1.55	8.83	-0.01	0.36	0.00	0.05
92	3.76 +0.17	2.65	2.57	0.13	0.20	1.43	8.86	0.00	0.36	0.00	0.05
93	3.93 +0.16	2.65	2.50	0.13	0.19	1.31	8.89	0.00	0.36	0.00	0.05
94	4.09 +0.16	2.64	2.42	0.13	0.18	1.19	8.91	0.00	0.36	0.00	0.05
	+0.16										
95	+4.25	+2.63	+2.35	+0.13	+0.17	-1.06	+8.94	+0.01	+0.36	0.00	+0.05
96	4.41 +0.16	2.62	2.27	0.13	0.16	0.94	8.96	0.01	0.35	0.00	0.05
97	4.57 +0.16	2.61	2.20	0.13	0.15	0.82	8.98	0.02	0.35	+0.01	0.05
98	4.72 +0.15	2.60	2.12	0.12	0.14	0.69	9.00	0.02	0.35	0.01	0.05
99	4.87 +0.15	2.58	2.05	0.12	0.14	0.57	9.01	0.02	0.35	0.01	0.05
	+0.15										
100	+5.02	+2.57	+1.97	+0.12	+0.13	-0.45	+9.03	+0.03	+0.35	+0.01	+0.05
101	5.16 +0.14	2.55	1.89	0.12	0.12	0.32	9.04	0.03	0.35	0.01	0.05
102	5.30 +0.14	2.53	1.81	0.12	0.11	0.20	9.05	0.04	0.35	0.01	0.05
103	5.44 +0.14	2.51	1.73	0.11	0.10	-0.07	9.06	0.04	0.35	0.01	0.05
104	5.58 +0.14	2.49	1.65	0.10	0.09	+0.06	9.06	0.04	0.35	0.02	0.05
	+0.14										
105	+5.72	+2.46	+1.56	+0.10	+0.08	+0.18	+9.07	+0.05	+0.35	+0.02	+0.05
106	5.85 +0.13	2.43	1.48	0.10	0.07	0.31	9.07	0.05	0.35	0.02	0.05
107	5.98 +0.13	2.40	1.40	0.09	0.06	0.44	9.08	0.06	0.35	0.02	0.05
108	6.11 +0.13	2.37	1.32	0.08	0.06	0.56	9.08	0.06	0.34	0.02	0.05
109	6.24 +0.12	2.34	1.23	0.08	0.05	0.69	9.07	0.06	0.34	0.02	0.05
	+0.12										
110	+6.36	+2.31	+1.15	+0.08	+0.04	+0.82	+9.06	+0.07	+0.34	+0.02	+0.05
111	6.48 +0.12	2.27	1.07	0.07	0.03	0.94	9.06	0.07	0.34	0.02	0.05
112	6.60 +0.12	2.23	0.98	0.07	0.02	1.07	9.05	0.08	0.34	0.02	0.05
113	6.72 +0.12	2.19	0.90	0.06	0.02	1.20	9.03	0.08	0.34	0.02	0.05
114	6.83 +0.11	2.15	0.81	0.06	+0.01	1.32	9.02	0.08	0.34	0.02	0.05
	+0.11										
115	+6.95	+2.11	+0.73	+0.05	0.00	+1.45	+9.01	+0.09	+0.34	+0.02	+0.04
116	7.06 +0.11	2.07	0.65	0.04	-0.01	1.58	8.99	0.09	0.34	0.02	0.04
117	7.17 +0.11	2.02	0.56	0.04	0.01	1.70	8.97	0.09	0.34	0.02	0.04
118	7.28 +0.11	1.97	0.48	0.03	0.02	1.83	8.95	0.10	0.33	0.02	0.04
119	7.38 +0.10	1.92	0.39	0.02	0.03	1.96	8.92	0.10	0.33	0.02	0.04
	+0.11										
120	+7.49	+1.87	+0.31	+0.02	-0.04	-2.08	+8.90	-0.11	+0.33	+0.02	+0.04

TABLE VI.—Arg. 2. *Action of Saturn.*

Arg.	(v. c. 0)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(v. s. 3)	(v. c. 3)	(v. s. 4)	(v. c. 4)	(v. s. 5)	(v. c. 5)
	"	"	"	"	"	"	"	"	"	"	"
120	+ 7.49 +0.10	+1.87	+0.31	+0.02	-0.04	+2.08	+8.90	+0.11	+0.33	+0.02	+0.04
121	7.59 +0.10	1.81	0.23	+0.01	0.04	2.20	8.87	0.11	0.33	0.02	0.04
122	7.69 +0.10	1.76	0.14	0.00	0.05	2.33	8.84	0.12	0.33	0.03	0.04
123	7.79 +0.09	1.70	+0.06	0.00	0.05	2.45	8.81	0.12	0.33	0.03	0.04
124	7.88 +0.10	1.64	-0.02	-0.01	0.06	2.58	8.78	0.12	0.32	0.03	0.04
125	+ 7.98 +0.10	+1.58	-0.11	-0.02	-0.07	+2.70	+8.74	+0.13	+0.32	+0.03	+0.04
126	8.08 +0.09	1.52	0.19	0.02	0.07	2.82	8.70	0.13	0.32	0.03	0.04
127	8.17 +0.10	1.46	0.27	0.03	0.08	2.94	8.66	0.13	0.32	0.03	0.04
128	8.27 +0.09	1.39	0.35	0.04	0.08	3.06	8.62	0.14	0.32	0.03	0.04
129	8.36 +0.09	1.32	0.42	0.05	0.08	3.18	8.58	0.14	0.32	0.03	0.04
130	+ 8.45 +0.09	+1.25	-0.50	-0.06	-0.09	+3.30	+8.54	+0.14	+0.32	+0.03	+0.04
131	8.54 +0.09	1.18	0.58	0.06	0.09	3.42	8.49	0.15	0.32	0.03	0.04
132	8.63 +0.09	1.11	0.66	0.07	0.10	3.54	8.44	0.15	0.32	0.03	0.04
133	8.72 +0.09	1.04	0.73	0.08	0.10	3.66	8.39	0.16	0.31	0.03	0.04
134	8.81 +0.08	0.96	0.81	0.09	0.10	3.77	8.34	0.16	0.31	0.03	0.04
135	+ 8.89 +0.09	+0.89	-0.88	-0.10	-0.10	+3.89	+8.28	+0.16	+0.31	+0.04	+0.04
136	8.98 +0.09	0.81	0.95	0.10	0.11	4.01	8.23	0.17	0.31	0.04	0.04
137	9.07 +0.08	0.73	1.02	0.11	0.11	4.12	8.17	0.17	0.31	0.04	0.03
138	9.15 +0.09	0.66	1.09	0.12	0.11	4.24	8.11	0.17	0.31	0.04	0.03
139	9.24 +0.09	0.58	1.16	0.13	0.12	4.35	8.05	0.18	0.30	0.04	0.03
140	+ 9.33 +0.08	+0.50	-1.23	-0.14	-0.12	+4.46	+7.99	+0.18	+0.30	+0.04	+0.03
141	9.41 +0.09	0.42	1.29	0.14	0.12	4.57	7.93	0.18	0.30	0.04	0.03
142	9.50 +0.08	0.34	1.35	0.15	0.12	4.68	7.86	0.19	0.30	0.04	0.03
143	9.58 +0.09	0.26	1.42	0.16	0.12	4.79	7.79	0.19	0.30	0.04	0.03
144	9.67 +0.08	0.17	1.48	0.16	0.12	4.90	7.72	0.19	0.30	0.04	0.03
145	+ 9.75 +0.09	+0.09	-1.54	-0.17	-0.12	+5.01	+7.65	+0.20	+0.30	+0.04	+0.03
146	9.84 +0.08	0.00	1.60	0.18	0.12	5.11	7.58	0.20	0.29	0.04	0.03
147	9.92 +0.09	-0.08	1.66	0.19	0.12	5.21	7.50	0.20	0.29	0.04	0.03
148	10.01 +0.09	0.17	1.71	0.20	0.12	5.31	7.42	0.21	0.29	0.04	0.03
149	10.10 +0.08	0.26	1.77	0.20	0.12	5.42	7.35	0.21	0.29	0.04	0.03
150	+10.18 +0.09	-0.35	-1.82	-0.21	-0.12	+5.52	+7.27	+0.21	+0.29	+0.04	+0.02
151	10.27 +0.09	0.43	1.87	0.22	0.11	5.61	7.19	0.21	0.28	0.04	0.02
152	10.36 +0.09	0.52	1.92	0.22	0.11	5.71	7.10	0.22	0.28	0.04	0.02
153	10.45 +0.09	0.61	1.96	0.23	0.11	5.81	7.02	0.22	0.28	0.04	0.02
154	10.54 +0.08	0.70	2.00	0.24	0.11	5.90	6.93	0.22	0.28	0.04	0.02
155	+10.62 +0.09	-0.79	-2.05	-0.24	-0.10	+5.99	+6.85	+0.22	+0.28	+0.04	+0.02
156	10.71 +0.09	0.88	2.10	0.25	0.10	6.08	6.76	0.23	0.28	0.04	0.02
157	10.80 +0.09	0.97	2.14	0.25	0.10	6.17	6.67	0.23	0.27	0.04	0.02
158	10.89 +0.10	1.06	2.18	0.26	0.09	6.26	6.58	0.23	0.27	0.04	0.02
159	10.99 +0.09	1.14	2.21	0.26	0.09	6.35	6.48	0.23	0.27	0.04	0.02
160	+11.08 +0.10	-1.23	-2.25	-0.27	-0.09	+6.44	+6.39	+0.24	+0.27	+0.04	+0.02
161	11.18 +0.09	1.32	2.28	0.27	0.08	6.52	6.30	0.24	0.27	0.04	0.02
162	11.27 +0.09	1.41	2.32	0.28	0.08	6.61	6.21	0.24	0.26	0.04	0.02
163	11.36 +0.10	1.50	2.35	0.28	0.07	6.69	6.11	0.24	0.26	0.04	0.02
164	11.46 +0.10	1.58	2.38	0.28	0.07	6.77	6.01	0.25	0.26	0.04	0.01
165	+11.56 +0.10	-1.67	-2.41	-0.29	-0.06	+6.85	+5.91	+0.25	+0.26	+0.04	+0.01
166	11.66 +0.10	1.76	2.43	0.29	0.06	6.93	5.81	0.25	0.26	0.04	0.01
167	11.76 +0.10	1.84	2.46	0.30	0.06	7.00	5.71	0.25	0.25	0.04	0.01
168	11.86 +0.10	1.93	2.48	0.30	0.05	7.07	5.61	0.26	0.25	0.04	0.01
169	11.96 +0.10	2.02	2.50	0.30	0.04	7.14	5.51	0.26	0.25	0.04	0.01
170	+12.06 +0.10	-2.10	-2.52	-0.30	-0.04	+7.21	+5.40	+0.26	+0.24	+0.04	+0.01
171	12.16 +0.10	2.18	2.54	0.30	0.03	7.28	5.30	0.26	0.24	0.04	0.01
172	12.26 +0.11	2.27	2.55	0.31	0.03	7.35	5.19	0.26	0.24	0.04	0.01
173	12.37 +0.10	2.35	2.57	0.31	0.02	7.41	5.08	0.27	0.24	0.04	0.01
174	12.47 +0.11	2.43	2.58	0.31	0.01	7.47	4.97	0.27	0.24	0.04	0.01
175	+12.58 +0.11	-2.51	-2.59	-0.31	-0.01	+7.53	+4.86	+0.27	+0.23	+0.04	+0.01
176	12.69 +0.11	2.59	2.60	0.31	0.00	7.59	4.75	0.27	0.23	0.04	0.00
177	12.80 +0.11	2.67	2.61	0.31	+0.01	7.65	4.64	0.27	0.23	0.04	0.00
178	12.91 +0.11	2.75	2.62	0.31	0.01	7.70	4.53	0.28	0.22	0.04	0.00
179	13.02 +0.11	2.82	2.63	0.31	0.02	7.76	4.41	0.28	0.22	0.04	0.00
180	+13.13	-2.90	-2.63	-0.31	+0.03	+7.81	+4.30	+0.28	+0.22	+0.04	0.00

TABLE VI.—Arg. 2. *Action of Saturn.*

Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(v. s. 3)	(v. c. 3)	(v. s. 4)	(v. c. 4)	(v. s. 5)	(v. c. 5)
	" /	"	"	"	"	"	"	"	"	"	"
180	+13.13 +0.11	-2.90	-2.63	-0.31	+0.03	+7.81	+4.30	+0.28	+0.22	+0.04	0.00
181	13.24 +0.11	2.97	2.64	0.31	0.03	7.86	4.19	0.28	0.22	0.04	0.00
182	13.35 +0.12	3.05	2.64	0.31	0.04	7.91	4.07	0.28	0.21	0.04	0.00
183	13.47 +0.11	3.12	2.64	0.31	0.05	7.95	3.96	0.28	0.21	0.04	0.00
184	13.58 +0.12	3.19	2.64	0.31	0.05	8.00	3.84	0.29	0.21	0.04	0.00
185	+13.70 +0.11	-3.26	-2.64	-0.31	+0.06	+8.04	+3.72	+0.29	+0.20	+0.04	0.00
186	13.81 +0.12	3.33	2.63	0.31	0.07	8.08	3.61	0.29	0.20	0.04	0.00
187	13.93 +0.12	3.40	2.63	0.30	0.08	8.12	3.49	0.29	0.20	0.04	0.00
188	14.05 +0.11	3.46	2.62	0.30	0.08	8.16	3.37	0.29	0.20	0.04	0.00
189	14.16 +0.12	3.52	2.62	0.30	0.09	8.19	3.26	0.29	0.19	0.04	0.00
190	+14.28 +0.12	-3.58	-2.61	-0.30	+0.09	+8.23	+3.14	+0.30	+0.19	+0.04	-0.01
191	14.40 +0.12	3.64	2.60	0.29	0.10	8.26	3.02	0.30	0.18	0.04	0.01
192	14.52 +0.12	3.70	2.59	0.29	0.11	8.29	2.90	0.30	0.18	0.04	0.01
193	14.64 +0.12	3.76	2.58	0.28	0.11	8.31	2.78	0.30	0.18	0.04	0.01
194	14.76 +0.12	3.82	2.57	0.28	0.12	8.33	2.66	0.30	0.17	0.04	0.01
195	+14.88 +0.12	-3.87	-2.56	-0.28	+0.13	+8.36	+2.54	+0.30	+0.17	+0.04	-0.01
196	15.00 +0.12	3.93	2.55	0.27	0.13	8.38	2.42	0.30	0.17	0.04	0.01
197	15.12 +0.13	3.98	2.53	0.26	0.14	8.40	2.30	0.31	0.16	0.04	0.01
198	15.25 +0.12	4.03	2.52	0.26	0.15	8.42	2.18	0.31	0.16	0.04	0.01
199	15.37 +0.12	4.07	2.50	0.26	0.15	8.44	2.06	0.31	0.16	0.04	0.01
200	+15.49 +0.13	-4.12	-2.48	-0.25	+0.16	+8.45	+1.94	+0.31	+0.16	+0.04	-0.01
201	15.62 +0.12	4.16	2.46	0.25	0.16	8.47	1.82	0.31	0.15	0.04	0.01
202	15.74 +0.12	4.21	2.44	0.24	0.17	8.48	1.70	0.31	0.15	0.04	0.01
203	15.86 +0.12	4.25	2.42	0.24	0.18	8.48	1.58	0.31	0.14	0.04	0.01
204	15.98 +0.12	4.28	2.40	0.23	0.18	8.49	1.46	0.32	0.14	0.04	0.02
205	+16.10 +0.12	-4.32	-2.38	-0.22	+0.19	+8.49	+1.34	+0.32	+0.14	+0.04	-0.02
206	16.22 +0.13	4.36	2.36	0.22	0.19	8.49	1.23	0.32	0.13	0.04	0.02
207	16.35 +0.12	4.39	2.34	0.21	0.20	8.49	1.11	0.32	0.13	0.04	0.02
208	16.47 +0.12	4.42	2.32	0.20	0.20	8.49	0.99	0.32	0.13	0.04	0.02
209	16.59 +0.12	4.45	2.29	0.20	0.21	8.49	0.87	0.32	0.12	0.04	0.02
210	+16.71 +0.12	-4.48	-2.27	-0.19	+0.21	+8.48	+0.75	+0.32	+0.12	+0.04	-0.02
211	16.83 +0.12	4.51	2.24	0.18	0.21	8.48	0.63	0.32	0.11	0.04	0.02
212	16.95 +0.12	4.53	2.22	0.18	0.22	8.47	0.52	0.33	0.11	0.04	0.02
213	17.07 +0.12	4.56	2.19	0.17	0.22	8.46	0.40	0.33	0.11	0.04	0.02
214	17.19 +0.12	4.58	2.17	0.16	0.22	8.45	0.28	0.33	0.10	0.04	0.02
215	+17.31 +0.11	-4.60	-2.14	-0.16	+0.23	+8.43	+0.17	+0.33	+0.10	+0.03	-0.02
216	17.42 +0.12	4.62	2.12	0.15	0.23	8.41	+0.05	0.33	0.10	0.03	0.02
217	17.54 +0.12	4.63	2.09	0.14	0.23	8.40	-0.06	0.33	0.09	0.03	0.02
218	17.66 +0.11	4.65	2.06	0.13	0.24	8.38	0.17	0.33	0.09	0.03	0.02
219	17.77 +0.12	4.66	2.04	0.12	0.24	8.36	0.29	0.33	0.08	0.03	0.02
220	+17.89 +0.11	-4.67	-2.01	-0.12	+0.24	+8.33	-0.40	+0.33	+0.08	+0.03	-0.02
221	18.00 +0.11	4.68	1.98	0.11	0.24	8.31	0.52	0.34	0.08	0.03	0.02
222	18.11 +0.11	4.69	1.95	0.10	0.25	8.28	0.63	0.34	0.07	0.03	0.02
223	18.22 +0.11	4.69	1.92	0.10	0.25	8.25	0.74	0.34	0.07	0.03	0.02
224	18.33 +0.11	4.69	1.90	0.09	0.25	8.22	0.85	0.34	0.06	0.03	0.02
225	+18.44 +0.10	-4.69	-1.87	-0.08	+0.25	+8.19	-0.96	+0.34	+0.06	+0.03	-0.02
226	18.54 +0.11	4.69	1.84	0.08	0.25	8.16	1.06	0.34	0.06	0.03	0.03
227	18.65 +0.10	4.69	1.81	0.07	0.25	8.12	1.17	0.34	0.05	0.03	0.03
228	18.75 +0.11	4.69	1.78	0.06	0.25	8.09	1.28	0.34	0.05	0.03	0.03
229	18.86 +0.10	4.68	1.75	0.05	0.26	8.05	1.38	0.34	0.05	0.03	0.03
230	+18.96 +0.10	-4.68	-1.72	-0.04	+0.26	+8.01	-1.49	+0.34	+0.04	+0.03	-0.03
231	19.06 +0.10	4.67	1.69	0.04	0.26	7.97	1.60	0.34	0.04	0.03	0.03
232	19.16 +0.10	4.66	1.66	0.03	0.26	7.93	1.70	0.35	0.04	0.03	0.03
233	19.26 +0.10	4.65	1.63	0.02	0.26	7.88	1.80	0.35	0.03	0.03	0.03
234	19.36 +0.09	4.64	1.60	0.02	0.26	7.84	1.90	0.35	0.03	0.03	0.03
235	+19.45 +0.09	-4.62	-1.57	-0.01	+0.26	+7.79	-2.00	+0.35	+0.02	+0.03	-0.03
236	19.54 +0.10	4.60	1.54	0.00	0.26	7.75	2.10	0.35	0.02	0.03	0.03
237	19.64 +0.09	4.59	1.50	0.00	0.26	7.70	2.20	0.35	0.02	0.02	0.03
238	19.73 +0.08	4.57	1.47	-0.01	0.26	7.65	2.30	0.35	0.01	0.02	0.03
239	19.81 +0.09	4.54	1.44	0.01	0.26	7.60	2.39	0.35	0.01	0.02	0.03
240	+19.90	-4.52	-1.41	+0.02	+0.25	+7.54	-2.49	+0.35	+0.01	+0.02	-0.03

TABLE VI.—Arg. 2. *Action of Saturn.*

Arg.	(v. c. 0)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(v. s. 3)	(v. c. 3)	(v. s. 4)	(v. c. 4)	(v. s. 5)	(v. c. 5)
	"	"	"	"	"	"	"	"	"	"	"
240	+19.90	+0.09	-4.52	-1.41	+0.02	+0.25	+7.54	-2.49	+0.35	+0.01	+0.02
241	19.99	+0.08	4.49	1.37	0.03	0.25	7.48	2.59	0.35	0.00	0.02
242	20.07	+0.08	4.47	1.34	0.03	0.25	7.42	2.68	0.35	0.00	0.02
243	20.15	+0.08	4.44	1.31	0.04	0.25	7.37	2.77	0.35	0.00	0.02
244	20.23	+0.08	4.41	1.28	0.04	0.25	7.31	2.86	0.35	-0.01	0.02
245	+20.31	+0.07	-4.38	-1.25	+0.05	+0.24	+7.25	-2.95	+0.36	-0.01	+0.02
246	20.38	+0.07	4.35	1.22	0.05	0.24	7.19	3.04	0.36	0.02	0.02
247	20.45	+0.07	4.31	1.19	0.06	0.24	7.13	3.12	0.36	0.02	0.02
248	20.52	+0.07	4.28	1.16	0.06	0.24	7.06	3.21	0.36	0.02	0.02
249	20.59	+0.07	4.24	1.13	0.07	0.24	7.00	3.29	0.36	0.03	0.02
250	+20.66	+0.07	-4.20	-1.09	+0.07	+0.23	+6.93	-3.37	+0.36	-0.03	+0.01
251	20.73	+0.06	4.16	1.06	0.07	0.23	6.86	3.45	0.36	0.03	0.01
252	20.79	+0.06	4.12	1.03	0.08	0.23	6.80	3.53	0.36	0.04	0.01
253	20.85	+0.06	4.08	1.00	0.08	0.22	6.73	3.61	0.36	0.04	0.01
254	20.91	+0.05	4.04	0.97	0.08	0.22	6.66	3.69	0.36	0.04	0.01
255	+20.96	+0.06	-3.99	-0.94	+0.09	+0.22	+6.59	-3.77	+0.36	-0.05	+0.01
256	21.02	+0.05	3.95	0.91	0.09	0.22	6.52	3.84	0.36	0.05	0.01
257	21.07	+0.04	3.90	0.88	0.09	0.21	6.45	3.91	0.36	0.05	0.01
258	21.11	+0.05	3.85	0.85	0.10	0.21	6.38	3.98	0.36	0.06	0.01
259	21.16	+0.04	3.80	0.82	0.10	0.20	6.30	4.05	0.36	0.06	0.01
260	+21.20	+0.04	-3.75	-0.79	+0.10	+0.20	+6.23	-4.12	+0.36	-0.06	+0.01
261	21.24	+0.04	3.70	0.76	0.11	0.20	6.15	4.19	0.36	0.07	0.01
262	21.28	+0.04	3.64	0.73	0.11	0.19	6.07	4.25	0.35	0.07	+0.01
263	21.32	+0.04	3.59	0.70	0.11	0.19	6.00	4.31	0.35	0.08	0.00
264	21.35	+0.03	3.54	0.67	0.11	0.18	5.92	4.37	0.35	0.08	0.00
265	+21.38	+0.03	-3.48	-0.64	+0.11	+0.18	+5.84	-4.43	+0.35	-0.08	0.00
266	21.41	+0.03	3.42	0.61	0.11	0.18	5.76	4.49	0.35	0.08	0.00
267	21.44	+0.02	3.36	0.58	0.12	0.17	5.68	4.55	0.35	0.09	0.00
268	21.46	+0.02	3.30	0.55	0.12	0.17	5.60	4.61	0.35	0.09	0.00
269	21.48	+0.02	3.24	0.52	0.12	0.16	5.52	4.67	0.35	0.09	0.00
270	+21.50	+0.02	-3.18	-0.49	+0.12	+0.16	+5.44	-4.72	+0.35	-0.10	0.00
271	21.52	+0.01	3.12	0.46	0.12	0.16	5.36	4.77	0.35	0.10	0.00
272	21.53	+0.01	3.05	0.44	0.12	0.15	5.27	4.82	0.35	0.10	0.00
273	21.54	+0.01	2.99	0.41	0.12	0.15	5.19	4.87	0.35	0.11	0.00
274	21.55	0.00	2.92	0.38	0.12	0.14	5.11	4.92	0.34	0.11	0.00
275	+21.55	+0.01	-2.86	-0.36	+0.12	+0.14	+5.02	-4.97	+0.34	-0.11	0.00
276	21.56	-0.01	2.79	0.33	0.12	0.13	4.94	5.01	0.34	0.12	0.00
277	21.55	0.00	2.72	0.30	0.12	0.13	4.85	5.05	0.34	0.12	0.00
278	21.55	-0.01	2.65	0.27	0.11	0.12	4.77	5.09	0.34	0.12	0.00
279	21.54	0.00	2.58	0.25	0.11	0.12	4.68	5.13	0.34	0.13	0.00
280	+21.54	-0.01	-2.51	-0.23	+0.11	+0.12	+4.60	-5.17	+0.34	-0.13	0.00
281	21.53	-0.02	2.44	0.20	0.11	0.11	4.51	5.21	0.34	0.13	0.00
282	21.51	-0.02	2.37	0.18	0.11	0.11	4.43	5.24	0.33	0.14	0.00
283	21.49	-0.02	2.30	0.15	0.11	0.10	4.34	5.28	0.33	0.14	-0.01
284	21.47	-0.03	2.22	0.13	0.10	0.10	4.26	5.31	0.33	0.14	0.01
285	+21.44	-0.02	-2.15	-0.11	+0.10	+0.10	+4.17	-5.34	+0.33	-0.15	-0.01
286	21.42	-0.03	2.08	0.08	0.10	0.09	4.09	5.37	0.33	0.15	0.01
287	21.39	-0.03	2.00	0.06	0.10	0.09	4.00	5.40	0.32	0.15	0.01
288	21.36	-0.04	1.93	0.04	0.10	0.08	3.92	5.43	0.32	0.16	0.01
289	21.32	-0.04	1.85	-0.02	0.09	0.08	3.83	5.45	0.32	0.16	0.01
290	+21.28	-0.04	-1.78	0.00	+0.09	+0.07	+3.75	-5.47	+0.32	-0.16	-0.01
291	21.24	-0.05	1.70	+0.03	0.09	0.07	3.66	5.49	0.32	0.16	0.01
292	21.19	-0.05	1.63	0.05	0.08	0.06	3.58	5.51	0.32	0.17	0.01
293	21.14	-0.05	1.55	0.07	0.08	0.06	3.49	5.53	0.31	0.17	0.01
294	21.09	-0.05	1.47	0.08	0.08	0.06	3.41	5.55	0.31	0.18	0.01
295	+21.04	-0.06	-1.39	+0.10	+0.07	+0.05	+3.33	-5.57	+0.31	-0.18	-0.01
296	20.98	-0.06	1.31	0.12	0.07	0.05	3.24	5.58	0.31	0.18	0.01
297	20.92	-0.06	1.24	0.14	0.06	0.04	3.16	5.59	0.30	0.18	0.01
298	20.86	-0.07	1.16	0.16	0.06	0.04	3.07	5.61	0.30	0.19	0.01
299	20.79	-0.07	1.08	0.17	0.06	0.04	2.99	5.62	0.30	0.19	0.01
300	+20.72		-1.00	+0.19	+0.06	+0.03	+2.91	-5.62	+0.30	-0.19	-0.01

TABLE VI.—Arg. 2. *Action of Saturn.*

Arg.	(v. c. 0)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(v. s. 3)	(v. c. 3)	(v. s. 4)	(v. c. 4)	(v. s. 5)	(v. c. 5)
	"	"	"	"	"	"	"	"	"	"	"
300	+20.72 -0.07	-1.00	+0.19	+0.06	+0.03	+2.91	-5.62	+0.30	-0.19	-0.01	-0.02
301	20.65 -0.08	0.92	0.21	0.05	0.03	2.83	5.63	0.29	0.20	0.01	0.02
302	20.57 -0.08	0.84	0.22	0.05	0.02	2.75	5.64	0.29	0.20	0.01	0.02
303	20.49 -0.08	0.76	0.23	0.04	0.02	2.67	5.64	0.29	0.20	0.01	0.02
304	20.41 -0.09	0.68	0.25	0.04	0.02	2.58	5.64	0.29	0.21	0.01	0.02
305	+20.32 -0.09	-0.60	+0.26	+0.03	+0.01	+2.50	-5.65	+0.28	-0.21	-0.01	-0.02
306	20.23 -0.09	0.52	0.27	0.03	0.01	2.42	5.65	0.28	0.21	0.01	0.02
307	20.14 -0.09	0.45	0.29	0.02	+0.01	2.34	5.65	0.28	0.22	0.01	0.02
308	20.05 -0.10	0.37	0.30	0.02	0.00	2.26	5.64	0.28	0.22	0.01	0.02
309	19.95 -0.10	0.29	0.31	0.02	0.00	2.19	5.64	0.27	0.22	0.01	0.02
310	+19.85 -0.10	-0.22	+0.32	+0.01	0.00	+2.11	-5.64	+0.27	-0.23	-0.01	-0.02
311	19.75 -0.11	0.14	0.33	+0.01	-0.01	2.03	5.63	0.27	0.23	0.01	0.02
312	19.64 -0.11	-0.06	0.34	0.00	0.01	1.95	5.63	0.26	0.23	0.01	0.02
313	19.53 -0.11	+0.02	0.35	0.00	0.01	1.88	5.62	0.26	0.24	0.01	0.01
314	19.42 -0.12	0.10	0.36	0.00	0.02	1.80	5.61	0.26	0.24	0.01	0.01
315	+19.30 -0.12	+0.18	+0.37	-0.01	-0.02	+1.73	-5.60	+0.26	-0.24	-0.01	-0.01
316	19.18 -0.12	0.26	0.38	0.01	0.02	1.65	5.59	0.25	0.24	0.01	0.01
317	19.06 -0.13	0.33	0.38	0.02	0.02	1.58	5.58	0.25	0.25	0.01	0.01
318	18.93 -0.13	0.41	0.39	0.02	0.03	1.51	5.57	0.25	0.25	0.01	0.01
319	18.80 -0.13	0.48	0.40	0.03	0.03	1.44	5.55	0.24	0.25	0.01	0.01
320	+18.67 -0.14	+0.56	+0.40	-0.03	-0.03	+1.37	-5.54	+0.24	-0.26	-0.01	-0.01
321	18.53 -0.13	0.64	0.40	0.04	0.04	1.30	5.53	0.24	0.26	0.02	0.01
322	18.40 -0.14	0.71	0.41	0.04	0.04	1.23	5.51	0.24	0.26	0.02	0.01
323	18.26 -0.15	0.78	0.41	0.05	0.04	1.16	5.49	0.23	0.27	0.02	0.01
324	18.11 -0.15	0.86	0.42	0.05	0.04	1.09	5.47	0.23	0.27	0.02	0.01
325	+17.96 -0.15	+0.93	+0.42	-0.06	-0.04	+1.03	-5.45	+0.23	-0.27	-0.02	-0.01
326	17.81 -0.15	1.00	0.42	0.06	0.05	0.96	5.43	0.22	0.28	0.02	0.01
327	17.66 -0.15	1.07	0.42	0.07	0.05	0.89	5.41	0.22	0.28	0.02	0.01
328	17.51 -0.16	1.15	0.42	0.07	0.05	0.83	5.38	0.22	0.28	0.02	0.01
329	17.35 -0.17	1.22	0.42	0.08	0.05	0.77	5.36	0.22	0.28	0.02	-0.01
330	+17.18 -0.16	+1.29	+0.42	-0.08	-0.05	+0.71	-5.34	+0.21	-0.28	-0.02	0.00
331	17.02 -0.17	1.36	0.42	0.08	0.06	0.65	5.31	0.21	0.29	0.02	0.00
332	16.85 -0.17	1.43	0.42	0.09	0.06	0.59	5.29	0.21	0.29	0.02	0.00
333	16.68 -0.17	1.49	0.42	0.09	0.06	0.53	5.26	0.20	0.29	0.02	0.00
334	16.51 -0.17	1.56	0.42	0.10	0.06	0.47	5.23	0.20	0.30	0.02	0.00
335	+16.34 -0.18	+1.63	+0.42	-0.10	-0.06	+0.41	-5.20	+0.20	-0.30	-0.02	0.00
336	16.16 -0.19	1.70	0.42	0.10	0.06	0.35	5.18	0.19	0.30	0.01	0.00
337	15.97 -0.18	1.76	0.41	0.11	0.06	0.30	5.15	0.19	0.30	0.01	0.00
338	15.79 -0.19	1.83	0.41	0.11	0.06	0.24	5.12	0.19	0.31	0.01	0.00
339	15.60 -0.19	1.89	0.40	0.12	0.07	0.19	5.09	0.18	0.31	0.01	0.00
340	+15.41 -0.19	+1.95	+0.40	-0.12	-0.07	+0.13	-5.06	+0.18	-0.31	-0.01	0.00
341	15.22 -0.20	2.01	0.39	0.13	0.07	0.08	5.03	0.18	0.32	0.01	0.00
342	15.02 -0.20	2.08	0.38	0.13	0.07	+0.03	5.00	0.18	0.32	0.01	0.00
343	14.82 -0.20	2.14	0.38	0.13	0.07	-0.02	4.97	0.17	0.32	0.01	0.00
344	14.62 -0.20	2.20	0.37	0.14	0.07	0.07	4.94	0.17	0.32	0.01	0.00
345	+14.42 -0.20	+2.26	+0.36	-0.14	-0.07	-0.12	-4.90	+0.16	-0.32	-0.01	0.00
346	14.22 -0.21	2.31	0.36	0.14	0.07	0.16	4.87	0.16	0.32	0.01	0.00
347	14.01 -0.21	2.37	0.35	0.15	0.07	0.21	4.84	0.16	0.33	0.01	0.00
348	13.80 -0.21	2.43	0.34	0.15	0.07	0.25	4.80	0.16	0.33	0.01	0.00
349	13.59 -0.22	2.48	0.33	0.16	0.07	0.30	4.77	0.15	0.33	0.01	0.00
350	+13.37 -0.21	+2.53	+0.32	-0.16	-0.07	-0.34	-4.73	+0.15	-0.33	-0.01	0.00
351	13.16 -0.22	2.59	0.31	0.16	0.07	0.38	4.70	0.15	0.33	0.01	0.00
352	12.94 -0.22	2.64	0.30	0.16	0.07	0.42	4.66	0.14	0.34	0.01	0.00
353	12.72 -0.23	2.69	0.29	0.17	0.07	0.46	4.63	0.14	0.34	0.01	0.00
354	12.49 -0.23	2.74	0.28	0.17	0.07	0.50	4.59	0.14	0.34	0.01	0.00
355	+12.26 -0.23	+2.79	+0.27	-0.17	-0.07	-0.53	-4.55	+0.13	-0.34	-0.01	0.00
356	12.03 -0.23	2.84	0.25	0.18	0.06	0.57	4.52	0.13	0.34	0.01	0.00
357	11.80 -0.23	2.88	0.24	0.18	0.06	0.61	4.48	0.13	0.34	0.01	0.00
358	11.57 -0.24	2.93	0.23	0.18	0.06	0.64	4.44	0.12	0.34	0.01	+0.01
359	11.33 -0.23	2.98	0.21	0.19	0.06	0.67	4.41	0.12	0.35	0.01	0.01
360	+11.10	+3.02	+0.20	-0.19	-0.06	-0.71	-4.37	+0.12	-0.35	-0.01	+0.01

TABLE VI.—Arg. 2. *Action of Saturn.*

Arg.	(v. c. 0)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(v. s. 3)	(v. c. 3)	(v. s. 4)	(v. c. 4)	(v. s. 5)	(v. c. 5)
	"	"	"	"	"	"	"	"	"	"	"
360	+11.10	+3.02	+0.20	-0.19	-0.06	-0.71	-4.37	+0.12	-0.35	-0.01	+0.01
361	10.86 -0.24	3.06	0.18	0.19	0.06	0.74	4.33	0.11	0.35	0.01	0.01
362	10.62 -0.24	3.10	0.17	0.19	0.06	0.77	4.30	0.11	0.35	0.01	0.01
363	10.37 -0.25	3.14	0.15	0.19	0.06	0.80	4.26	0.11	0.35	0.01	0.01
364	10.13 -0.24	3.18	0.14	0.19	0.05	0.83	4.23	0.10	0.35	0.01	0.01
365	+9.88	+3.22	+0.13	-0.19	-0.05	-0.86	-4.19	+0.10	-0.35	-0.01	+0.01
366	9.63 -0.25	3.26	0.12	0.19	0.05	0.88	4.15	0.10	0.35	0.01	0.01
367	9.38 -0.25	3.29	0.10	0.19	0.05	0.91	4.12	0.09	0.35	0.01	0.01
368	9.13 -0.26	3.33	0.08	0.20	0.04	0.93	4.08	0.09	0.35	0.01	0.01
369	8.87 -0.26	3.36	0.06	0.20	0.04	0.96	4.05	0.09	0.36	0.01	0.01
370	+8.61	+3.39	+0.04	-0.20	-0.04	-0.98	-4.01	+0.08	-0.36	-0.01	+0.01
371	8.36 -0.25	3.42	0.03	0.20	0.04	1.00	3.97	0.08	0.36	0.01	0.01
372	8.10 -0.26	3.45	+0.01	0.20	0.04	1.02	3.94	0.08	0.36	-0.01	0.01
373	7.84 -0.26	3.48	-0.01	0.20	0.03	1.04	3.90	0.07	0.36	0.00	0.01
374	7.57 -0.26	3.51	0.03	0.20	0.03	1.06	3.87	0.07	0.36	0.00	0.01
375	+7.31	+3.54	-0.04	-0.20	-0.03	-1.08	-3.83	+0.06	-0.36	0.00	+0.01
376	7.04 -0.27	3.56	0.06	0.20	0.02	1.10	3.80	0.06	0.36	0.00	0.01
377	6.78 -0.26	3.58	0.08	0.20	0.02	1.11	3.76	0.06	0.36	0.00	0.01
378	6.51 -0.27	3.61	0.10	0.20	0.02	1.13	3.73	0.06	0.36	0.00	0.01
379	6.24 -0.27	3.63	0.12	0.20	0.02	1.14	3.69	0.05	0.36	0.00	0.01
380	+5.97	+3.65	-0.14	-0.20	-0.01	-1.16	-3.66	+0.05	-0.36	0.00	+0.01
381	5.70 -0.27	3.67	0.16	0.20	0.01	1.17	3.63	0.04	0.36	0.00	0.01
382	5.42 -0.28	3.68	0.18	0.20	-0.01	1.18	3.60	0.04	0.36	0.00	0.01
383	5.14 -0.28	3.70	0.20	0.20	0.00	1.20	3.57	0.04	0.36	0.00	0.01
384	4.87 -0.27	3.72	0.22	0.20	0.00	1.21	3.53	0.03	0.36	0.00	0.01
385	+4.59	+3.73	-0.24	-0.20	0.00	-1.22	-3.50	+0.03	-0.36	0.00	+0.01
386	4.31 -0.28	3.74	0.26	0.20	+0.01	1.23	3.47	0.03	0.36	0.00	0.01
387	4.03 -0.28	3.75	0.29	0.19	0.01	1.24	3.44	0.02	0.36	0.00	0.01
388	3.75 -0.28	3.76	0.31	0.19	0.01	1.25	3.41	0.02	0.36	0.00	0.01
389	3.46 -0.29	3.77	0.33	0.19	0.02	1.25	3.38	0.02	0.36	0.00	0.01
390	+3.18	+3.78	-0.35	-0.19	+0.02	-1.26	-3.35	+0.01	-0.36	0.00	+0.01
391	2.90 -0.28	3.78	0.37	0.19	0.02	1.27	3.33	+0.01	0.36	0.00	0.01
392	2.61 -0.29	3.79	0.40	0.18	0.03	1.28	3.30	0.00	0.36	0.00	0.01
393	2.33 -0.28	3.79	0.42	0.18	0.03	1.28	3.27	0.00	0.36	0.00	0.01
394	2.04 -0.29	3.80	0.44	0.18	0.04	1.28	3.25	0.00	0.36	0.00	0.01
395	+1.75	+3.80	-0.46	-0.18	+0.04	-1.29	-3.22	-0.01	-0.36	0.00	+0.01
396	1.46 -0.29	3.80	0.49	0.17	0.04	1.29	3.19	0.01	0.35	0.00	0.01
397	1.18 -0.28	3.80	0.51	0.17	0.05	1.30	3.17	0.02	0.35	0.00	0.01
398	0.89 -0.29	3.79	0.53	0.17	0.05	1.30	3.15	0.02	0.35	0.00	0.01
399	0.60 -0.29	3.79	0.56	0.17	0.06	1.30	3.12	0.02	0.35	0.00	0.01
400	+0.31	+3.79	-0.58	-0.16	+0.06	-1.30	-3.10	-0.03	-0.35	+0.01	+0.01
401	+0.02 -0.29	3.78	0.60	0.16	0.06	1.31	3.08	0.03	0.35	0.01	0.01
402	-0.28 -0.30	3.77	0.63	0.16	0.07	1.31	3.05	0.04	0.35	0.01	0.01
403	0.57 -0.29	3.76	0.65	0.15	0.07	1.31	3.03	0.04	0.35	0.01	0.01
404	0.86 -0.29	3.75	0.68	0.15	0.08	1.31	3.01	0.04	0.35	0.01	0.01
405	-1.15	+3.74	-0.70	-0.15	+0.08	-1.31	-2.99	-0.05	-0.35	+0.01	+0.01
406	1.45 -0.30	3.73	0.72	0.14	0.08	1.31	2.97	0.05	0.35	0.01	0.01
407	1.74 -0.29	3.72	0.75	0.14	0.09	1.31	2.96	0.06	0.34	0.01	0.01
408	2.03 -0.29	3.70	0.77	0.14	0.09	1.31	2.94	0.06	0.34	0.01	0.01
409	2.33 -0.30	3.69	0.80	0.13	0.10	1.31	2.92	0.06	0.34	0.01	0.01
410	-2.62	+3.67	-0.82	-0.13	+0.10	-1.30	-2.91	-0.07	-0.34	+0.01	+0.01
411	2.92 -0.30	3.65	0.84	0.12	0.10	1.30	2.89	0.07	0.34	0.01	0.01
412	3.21 -0.29	3.63	0.87	0.12	0.11	1.30	2.87	0.08	0.34	0.01	0.01
413	3.50 -0.29	3.61	0.89	0.11	0.11	1.30	2.86	0.08	0.34	0.01	0.01
414	3.80 -0.30	3.59	0.92	0.11	0.11	1.30	2.85	0.08	0.34	0.01	+0.01
415	-4.09	+3.57	-0.94	-0.11	+0.12	-1.29	-2.83	-0.09	-0.34	+0.01	0.00
416	4.38 -0.29	3.54	0.97	0.10	0.12	1.29	2.82	0.09	0.34	0.01	0.00
417	4.68 -0.30	3.52	0.99	0.10	0.12	1.29	2.81	0.09	0.34	0.01	0.00
418	4.97 -0.29	3.49	1.02	0.09	0.13	1.29	2.80	0.10	0.33	0.01	0.00
419	5.26 -0.29	3.46	1.04	0.09	0.13	1.29	2.79	0.10	0.33	0.01	0.00
420	-5.55	+3.44	-1.06	-0.08	+0.13	-1.28	-2.78	-0.11	-0.33	+0.01	0.00

TABLE VI.—Arg. 2. *Action of Saturn.*

Arg.	(v. c. 0)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(v. s. 3)	(v. c. 3)	(v. s. 4)	(v. c. 4)	(v. s. 5)	(v. c. 5)
	"	"	"	"	"	"	"	"	"	"	"
420	— 5.55 —0.30	+3.44	—1.06	—0.08	+0.13	—1.28	—2.78	—0.11	—0.33	+0.01	0.00
421	5.85 —0.29	3.41	1.09	0.08	0.14	1.28	2.77	0.11	0.33	0.01	0.00
422	6.14 —0.29	3.38	1.11	0.07	0.14	1.28	2.77	0.12	0.33	0.01	0.00
423	6.43 —0.29	3.35	1.13	0.07	0.14	1.27	2.76	0.12	0.33	0.01	0.00
424	6.72 —0.29	3.32	1.16	0.06	0.14	1.27	2.75	0.12	0.32	0.01	0.00
425	— 7.01 —0.29	+3.28	—1.18	—0.06	+0.15	—1.27	—2.75	—0.13	—0.32	+0.01	0.00
426	7.30 —0.28	3.25	1.20	0.05	0.15	1.26	2.74	0.13	0.32	0.01	0.00
427	7.58 —0.29	3.21	1.22	0.05	0.16	1.26	2.74	0.13	0.32	0.01	0.00
428	7.87 —0.29	3.18	1.25	0.04	0.16	1.26	2.73	0.14	0.32	0.01	0.00
429	8.16 —0.28	3.14	1.27	0.04	0.16	1.26	2.73	0.14	0.32	0.01	0.00
430	— 8.44 —0.29	+3.11	—1.29	—0.03	+0.16	—1.26	—2.73	—0.14	—0.32	+0.01	0.00
431	8.73 —0.28	3.07	1.31	0.03	0.17	1.26	2.72	0.15	0.32	0.02	0.00
432	9.01 —0.29	3.03	1.33	0.02	0.17	1.25	2.72	0.15	0.32	0.02	0.00
433	9.30 —0.28	2.99	1.35	0.02	0.17	1.25	2.72	0.16	0.31	0.02	0.00
434	9.58 —0.28	2.95	1.38	0.01	0.17	1.25	2.72	0.16	0.31	0.02	0.00
435	— 9.86 —0.28	+2.91	—1.40	—0.01	+0.17	—1.25	—2.72	—0.16	—0.31	+0.02	0.00
436	10.14 —0.28	2.86	1.42	0.00	0.17	1.25	2.72	0.17	0.31	0.02	0.00
437	10.42 —0.27	2.82	1.44	0.00	0.17	1.25	2.73	0.17	0.31	0.02	0.00
438	10.69 —0.28	2.77	1.46	+0.01	0.18	1.25	2.73	0.17	0.31	0.02	0.00
439	10.97 —0.27	2.72	1.48	0.01	0.18	1.25	2.73	0.18	0.30	0.02	0.00
440	—11.24 —0.28	+2.68	—1.50	+0.02	+0.18	—1.25	—2.73	—0.18	—0.30	+0.02	0.00
441	11.52 —0.27	2.64	1.52	0.02	0.18	1.25	2.74	0.18	0.30	0.02	0.00
442	11.79 —0.27	2.59	1.53	0.03	0.18	1.26	2.74	0.19	0.30	0.02	—0.01
443	12.06 —0.26	2.55	1.55	0.03	0.18	1.26	2.75	0.19	0.30	0.02	0.01
444	12.32 —0.27	2.50	1.57	0.04	0.19	1.26	2.75	0.19	0.30	0.02	0.01
445	—12.59 —0.27	+2.45	—1.59	+0.04	+0.19	—1.26	—2.76	—0.20	—0.30	+0.02	—0.01
446	12.86 —0.26	2.40	1.60	0.05	0.19	1.27	2.77	0.20	0.29	0.02	0.01
447	13.12 —0.26	2.35	1.62	0.05	0.19	1.27	2.77	0.20	0.29	0.02	0.01
448	13.38 —0.26	2.30	1.63	0.06	0.19	1.27	2.78	0.21	0.29	0.02	0.01
449	13.64 —0.26	2.25	1.65	0.06	0.19	1.28	2.79	0.21	0.29	0.02	0.01
450	—13.90 —0.26	+2.20	—1.66	+0.07	+0.19	—1.29	—2.80	—0.21	—0.29	+0.02	—0.01
451	14.16 —0.25	2.15	1.68	0.07	0.19	1.29	2.81	0.21	0.28	0.02	0.01
452	14.41 —0.25	2.10	1.69	0.08	0.19	1.30	2.82	0.22	0.28	0.02	0.01
453	14.66 —0.25	2.05	1.71	0.08	0.19	1.31	2.83	0.22	0.28	0.02	0.01
454	14.91 —0.25	2.00	1.72	0.08	0.19	1.31	2.84	0.22	0.28	0.02	0.01
455	—15.16 —0.25	+1.94	—1.73	+0.09	+0.19	—1.32	—2.85	—0.22	—0.28	+0.02	—0.01
456	15.41 —0.24	1.89	1.74	0.09	0.19	1.33	2.86	0.23	0.28	0.02	0.01
457	15.65 —0.24	1.84	1.75	0.10	0.18	1.34	2.87	0.23	0.27	0.02	0.01
458	15.89 —0.24	1.78	1.76	0.10	0.18	1.35	2.88	0.23	0.27	0.02	0.01
459	16.13 —0.24	1.73	1.78	0.10	0.18	1.37	2.89	0.23	0.27	0.02	0.01
460	—16.37 —0.24	+1.68	—1.79	+0.11	+0.18	—1.38	—2.91	—0.24	—0.27	+0.02	—0.01
461	16.61 —0.23	1.62	1.80	0.11	0.18	1.39	2.92	0.24	0.27	0.02	0.01
462	16.84 —0.23	1.57	1.81	0.11	0.18	1.40	2.93	0.24	0.26	0.02	0.01
463	17.07 —0.23	1.51	1.82	0.12	0.18	1.42	2.94	0.24	0.26	0.02	0.02
464	17.30 —0.23	1.46	1.82	0.12	0.18	1.43	2.95	0.25	0.26	0.02	0.02
465	—17.53 —0.22	+1.40	—1.83	+0.12	+0.18	—1.45	—2.97	—0.25	—0.26	+0.02	—0.02
466	17.75 —0.22	1.35	1.84	0.13	0.17	1.46	2.98	0.25	0.26	0.01	0.02
467	17.97 —0.22	1.29	1.84	0.13	0.17	1.48	2.99	0.25	0.25	0.01	0.02
468	18.19 —0.22	1.24	1.85	0.13	0.17	1.49	3.01	0.26	0.25	0.01	0.02
469	18.41 —0.21	1.18	1.85	0.14	0.17	1.51	3.02	0.26	0.25	0.01	0.02
470	—18.62 —0.21	+1.13	—1.86	+0.14	+0.17	—1.53	—3.03	—0.26	—0.24	+0.01	—0.02
471	18.83 —0.21	1.07	1.86	0.14	0.17	1.55	3.05	0.26	0.24	0.01	0.02
472	19.04 —0.21	1.01	1.87	0.14	0.16	1.57	3.06	0.26	0.24	0.01	0.02
473	19.25 —0.20	0.96	1.87	0.14	0.16	1.59	3.07	0.27	0.24	0.01	0.02
474	19.45 —0.20	0.91	1.87	0.15	0.16	1.62	3.09	0.27	0.24	0.01	0.02
475	—19.65 —0.20	+0.85	—1.87	+0.15	+0.16	—1.64	—3.10	—0.27	—0.23	+0.01	—0.02
476	19.85 —0.19	0.80	1.87	0.15	0.15	1.66	3.11	0.27	0.23	0.01	0.02
477	20.04 —0.19	0.74	1.87	0.15	0.15	1.69	3.13	0.27	0.23	0.01	0.02
478	20.23 —0.19	0.69	1.87	0.15	0.15	1.71	3.14	0.28	0.22	0.01	0.02
479	20.42 —0.19	0.63	1.87	0.16	0.15	1.74	3.15	0.28	0.22	0.01	0.02
480	—20.61	+0.58	—1.86	+0.16	+0.14	—1.77	—3.17	—0.28	—0.22	+0.01	—0.02

TABLE VI.—Arg. 2. *Action of Saturn.*

Arg.	(v. c. 0)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(v. s. 3)	(v. c. 3)	(v. s. 4)	(v. c. 4)	(v. s. 5)	(v. c. 5)
	"	"	"	"	"	"	"	"	"	"	"
480	-20. 61 -0. 18	+0. 58	-1. 86	+0. 16	+0. 14	-1. 77	-3. 47	-0. 28	-0. 22	+0. 01	-0. 02
481	20. 79 -0. 18	0. 52	1. 86	0. 16	0. 14	1. 80	3. 18	0. 28	0. 22	0. 01	0. 02
482	20. 97 -0. 18	0. 47	1. 86	0. 16	0. 14	1. 83	3. 20	0. 28	0. 21	0. 01	0. 02
483	21. 15 -0. 17	0. 42	1. 85	0. 16	0. 14	1. 86	3. 21	0. 28	0. 21	0. 01	0. 02
484	21. 32 -0. 18	0. 36	1. 85	0. 16	0. 13	1. 89	3. 22	0. 29	0. 21	0. 01	0. 02
485	-21. 50 -0. 17	+0. 31	-1. 85	+0. 16	+0. 13	-1. 92	-3. 23	-0. 29	-0. 20	+0. 01	-0. 02
486	21. 67 -0. 16	0. 26	1. 84	0. 16	0. 13	1. 95	3. 24	0. 29	0. 20	0. 01	0. 03
487	21. 83 -0. 16	0. 20	1. 84	0. 16	0. 12	1. 98	3. 26	0. 29	0. 20	0. 01	0. 03
488	21. 99 -0. 16	0. 15	1. 83	0. 16	0. 12	2. 01	3. 27	0. 29	0. 20	0. 01	0. 03
489	22. 15 -0. 15	0. 10	1. 82	0. 16	0. 12	2. 05	3. 28	0. 29	0. 19	0. 01	0. 03
490	-22. 30 -0. 15	+0. 05	-1. 81	+0. 16	+0. 11	-2. 08	-3. 29	-0. 30	-0. 19	+0. 01	-0. 03
491	22. 45 -0. 15	-0. 01	1. 80	0. 16	0. 11	2. 12	3. 30	0. 30	0. 18	0. 01	0. 03
492	22. 60 -0. 15	0. 06	1. 79	0. 16	0. 11	2. 15	3. 31	0. 30	0. 18	0. 01	0. 03
493	22. 75 -0. 14	0. 11	1. 78	0. 16	0. 10	2. 19	3. 32	0. 30	0. 18	+0. 01	0. 03
494	22. 89 -0. 14	0. 16	1. 77	0. 16	0. 10	2. 23	3. 32	0. 30	0. 17	0. 00	0. 03
495	-23. 03 -0. 14	-0. 21	-1. 76	+0. 16	+0. 10	-2. 27	-3. 33	-0. 30	-0. 17	0. 00	-0. 03
496	23. 17 -0. 13	0. 25	1. 74	0. 16	0. 10	2. 31	3. 34	0. 30	0. 17	0. 00	0. 03
497	23. 30 -0. 13	0. 30	1. 73	0. 16	0. 09	2. 35	3. 34	0. 31	0. 16	0. 00	0. 03
498	23. 43 -0. 13	0. 35	1. 72	0. 15	0. 09	2. 39	3. 35	0. 31	0. 16	0. 00	0. 03
499	23. 56 -0. 12	0. 40	1. 70	0. 15	0. 08	2. 43	3. 36	0. 31	0. 16	0. 00	0. 03
500	-23. 68 -0. 12	-0. 45	-1. 68	+0. 15	+0. 08	-2. 47	-3. 36	-0. 31	-0. 16	0. 00	-0. 03
501	23. 80 -0. 11	0. 49	1. 67	0. 15	0. 08	2. 52	3. 37	0. 31	0. 15	0. 00	0. 03
502	23. 91 -0. 12	0. 54	1. 65	0. 15	0. 07	2. 56	3. 37	0. 31	0. 15	0. 00	0. 03
503	24. 03 -0. 11	0. 58	1. 63	0. 14	0. 07	2. 61	3. 38	0. 31	0. 14	0. 00	0. 03
504	24. 14 -0. 10	0. 63	1. 61	0. 14	0. 07	2. 65	3. 38	0. 32	0. 14	0. 00	0. 03
505	-24. 24 -0. 10	-0. 67	-1. 60	+0. 14	+0. 06	-2. 70	-3. 38	-0. 32	-0. 14	0. 00	-0. 03
506	24. 34 -0. 10	0. 72	1. 58	0. 14	0. 06	2. 74	3. 38	0. 32	0. 13	0. 00	0. 03
507	24. 44 -0. 10	0. 76	1. 56	0. 14	0. 06	2. 79	3. 38	0. 32	0. 13	0. 00	0. 03
508	24. 54 -0. 09	0. 80	1. 53	0. 14	0. 05	2. 84	3. 38	0. 32	0. 13	0. 00	0. 03
509	24. 63 -0. 08	0. 84	1. 51	0. 13	0. 05	2. 89	3. 38	0. 32	0. 12	0. 00	0. 03
510	-24. 71 -0. 09	-0. 89	-1. 48	+0. 13	+0. 05	-2. 94	-3. 38	-0. 32	-0. 12	0. 00	-0. 03
511	24. 80 -0. 08	0. 93	1. 46	0. 13	0. 04	2. 99	3. 38	0. 32	0. 11	0. 00	0. 03
512	24. 88 -0. 07	0. 97	1. 43	0. 13	0. 04	3. 04	3. 38	0. 33	0. 11	0. 00	0. 03
513	24. 95 -0. 07	1. 00	1. 41	0. 12	0. 04	3. 09	3. 37	0. 33	0. 11	0. 00	0. 03
514	25. 02 -0. 07	1. 04	1. 38	0. 12	0. 03	3. 14	3. 37	0. 33	0. 10	0. 00	0. 03
515	-25. 09 -0. 07	-1. 08	-1. 36	+0. 12	+0. 03	-3. 19	-3. 36	-0. 33	-0. 10	-0. 01	-0. 03
516	25. 16 -0. 06	1. 11	1. 33	0. 12	0. 03	3. 24	3. 36	0. 33	0. 10	0. 01	0. 03
517	25. 22 -0. 06	1. 15	1. 30	0. 11	0. 02	3. 29	3. 35	0. 33	0. 09	0. 01	0. 03
518	25. 28 -0. 05	1. 18	1. 28	0. 11	0. 02	3. 35	3. 34	0. 33	0. 09	0. 01	0. 03
519	25. 33 -0. 05	1. 22	1. 25	0. 10	0. 02	3. 40	3. 34	0. 33	0. 08	0. 01	0. 03
520	-25. 38 -0. 05	-1. 25	-1. 21	+0. 10	+0. 02	-3. 46	-3. 33	-0. 33	-0. 08	-0. 01	-0. 03
521	25. 43 -0. 04	1. 29	1. 18	0. 10	0. 02	3. 51	3. 32	0. 34	0. 08	0. 01	0. 03
522	25. 47 -0. 04	1. 32	1. 15	0. 09	0. 01	3. 57	3. 30	0. 34	0. 07	0. 01	0. 03
523	25. 51 -0. 04	1. 35	1. 12	0. 09	0. 01	3. 62	3. 29	0. 34	0. 07	0. 01	0. 03
524	25. 55 -0. 03	1. 38	1. 08	0. 09	+0. 01	3. 68	3. 28	0. 34	0. 06	0. 01	0. 03
525	-25. 58 -0. 03	-1. 41	-1. 05	+0. 08	0. 00	-3. 73	-3. 26	-0. 34	-0. 06	-0. 01	-0. 03
526	25. 61 -0. 02	1. 44	1. 02	0. 08	0. 00	3. 79	3. 24	0. 34	0. 06	0. 01	0. 03
527	25. 63 -0. 02	1. 47	0. 98	0. 08	0. 00	3. 85	3. 22	0. 34	0. 05	0. 01	0. 03
528	25. 65 -0. 02	1. 50	0. 95	0. 07	0. 00	3. 91	3. 21	0. 34	0. 05	0. 01	0. 03
529	25. 67 -0. 01	1. 52	0. 91	0. 07	-0. 01	3. 96	3. 19	0. 34	0. 05	0. 02	0. 03
530	-25. 68 -0. 01	-1. 54	-0. 87	+0. 06	-0. 01	-4. 02	-3. 16	-0. 34	-0. 04	-0. 02	-0. 03
531	25. 69 0. 00	1. 57	0. 83	0. 06	0. 01	4. 08	3. 14	0. 34	0. 04	0. 02	0. 03
532	25. 69 0. 00	1. 59	0. 79	0. 06	0. 01	4. 14	3. 12	0. 35	0. 04	0. 02	0. 03
533	25. 69 0. 00	1. 61	0. 75	0. 05	0. 01	4. 20	3. 10	0. 35	0. 03	0. 02	0. 03
534	25. 69 +0. 01	1. 63	0. 71	0. 05	0. 02	4. 26	3. 07	0. 35	0. 03	0. 02	0. 03
535	-25. 68 +0. 01	-1. 65	-0. 67	+0. 04	-0. 02	-4. 31	-3. 04	-0. 35	-0. 02	-0. 02	-0. 03
536	25. 67 +0. 01	1. 67	0. 63	0. 04	0. 02	4. 37	3. 01	0. 35	0. 02	0. 02	0. 03
537	25. 66 +0. 02	1. 69	0. 59	0. 04	0. 02	4. 43	2. 99	0. 35	0. 02	0. 02	0. 03
538	25. 64 +0. 02	1. 71	0. 54	0. 03	0. 02	4. 49	2. 96	0. 35	0. 01	0. 02	0. 03
539	25. 62 +0. 03	1. 72	0. 50	0. 03	0. 02	4. 55	2. 92	0. 35	0. 01	0. 02	0. 03
540	-25. 59	-1. 74	-0. 46	+0. 02	-0. 03	-4. 61	-2. 89	-0. 35	-0. 01	-0. 02	-0. 03

TABLE VI.—Arg. 2. *Action of Saturn.*

Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(v. s. 3)	(v. c. 3)	(v. s. 4)	(v. c. 4)	(v. s. 5)	(v. c. 5)
	"	"	"	"	"	"	"	"	"	"	"
540	-25.59 +0.03	-1.74	-0.46	+0.02	-0.03	-4.61	-2.89	-0.35	-0.01	-0.02	-0.03
541	25.56 +0.03	1.75	0.41	0.02	0.03	4.67	2.86	0.35	0.00	0.02	0.03
542	25.53 +0.04	1.76	0.37	0.02	0.03	4.73	2.83	0.35	0.00	0.02	0.03
543	25.49 +0.04	1.77	0.32	0.01	0.03	4.78	2.79	0.35	0.00	0.02	0.03
544	25.45 +0.05	1.78	0.28	+0.01	0.03	4.84	2.75	0.35	+0.01	0.02	0.03
545	-25.40 +0.05	-1.79	-0.23	0.00	-0.03	-4.90	-2.72	-0.36	+0.01	-0.02	-0.03
546	25.35 +0.05	1.80	0.18	0.00	0.03	4.96	2.68	0.36	0.02	0.02	0.03
547	25.30 +0.06	1.81	0.14	-0.01	0.03	5.02	2.63	0.36	0.02	0.03	0.03
548	25.24 +0.06	1.82	0.09	0.01	0.03	5.08	2.59	0.36	0.02	0.03	0.03
549	25.18 +0.06	1.82	-0.04	0.01	0.03	5.13	2.55	0.36	0.03	0.03	0.03
550	-25.12 +0.07	-1.83	+0.01	-0.02	-0.03	-5.19	-2.51	-0.36	+0.03	-0.03	-0.03
551	25.05 +0.07	1.83	0.06	0.02	0.03	5.25	2.46	0.36	0.03	0.03	0.03
552	24.98 +0.08	1.83	0.11	0.03	0.03	5.31	2.41	0.36	0.04	0.03	0.03
553	24.90 +0.08	1.83	0.16	0.03	0.03	5.36	2.37	0.36	0.04	0.03	0.03
554	24.82 +0.08	1.83	0.21	0.04	0.03	5.42	2.32	0.36	0.04	0.03	0.03
555	-24.74 +0.08	-1.83	+0.26	-0.04	-0.03	-5.48	-2.26	-0.36	+0.05	-0.03	-0.02
556	24.66 +0.09	1.83	0.31	0.04	0.03	5.53	2.21	0.36	0.05	0.03	0.02
557	24.57 +0.09	1.82	0.37	0.05	0.03	5.59	2.16	0.36	0.05	0.03	0.02
558	24.48 +0.10	1.82	0.42	0.05	0.03	5.64	2.10	0.36	0.06	0.03	0.02
559	24.38 +0.10	1.81	0.47	0.06	0.03	5.69	2.05	0.36	0.06	0.03	0.02
560	-24.28 +0.10	-1.81	+0.52	-0.06	-0.03	-5.75	-2.00	-0.36	+0.06	-0.03	-0.02
561	24.18 +0.11	1.80	0.58	0.06	0.02	5.80	1.94	0.36	0.07	0.03	0.02
562	24.07 +0.11	1.79	0.63	0.07	0.02	5.85	1.88	0.35	0.07	0.03	0.02
563	23.96 +0.12	1.78	0.68	0.07	0.02	5.90	1.82	0.35	0.08	0.04	0.02
564	23.84 +0.11	1.77	0.74	0.08	0.02	5.96	1.75	0.35	0.08	0.04	0.02
565	-23.73 +0.12	-1.76	+0.79	-0.08	-0.02	-6.01	-1.69	-0.35	+0.08	-0.04	-0.02
566	23.61 +0.13	1.74	0.84	0.08	0.02	6.06	1.63	0.35	0.08	0.04	0.02
567	23.48 +0.13	1.73	0.90	0.09	0.01	6.11	1.56	0.35	0.09	0.04	0.02
568	23.35 +0.13	1.71	0.95	0.09	0.01	6.16	1.50	0.35	0.09	0.04	0.02
569	23.22 +0.13	1.70	1.01	0.09	0.01	6.20	1.43	0.35	0.09	0.04	0.02
570	-23.09 +0.14	-1.68	+1.07	-0.10	-0.01	-6.25	-1.36	-0.35	+0.10	-0.04	-0.02
571	22.95 +0.14	1.66	1.12	0.10	0.00	6.29	1.29	0.35	0.10	0.04	0.02
572	22.81 +0.15	1.64	1.18	0.10	0.00	6.34	1.22	0.35	0.10	0.04	0.02
573	22.66 +0.14	1.62	1.24	0.11	0.00	6.38	1.15	0.35	0.11	0.04	0.01
574	22.52 +0.15	1.60	1.29	0.11	+0.01	6.42	1.07	0.34	0.11	0.04	0.01
575	-22.37 +0.15	-1.58	+1.34	-0.11	+0.01	-6.47	-1.00	-0.34	+0.11	-0.04	-0.01
576	22.22 +0.16	1.55	1.40	0.12	0.01	6.51	0.92	0.34	0.12	0.04	0.01
577	22.06 +0.16	1.53	1.46	0.12	0.02	6.55	0.85	0.34	0.12	0.04	0.01
578	21.90 +0.16	1.50	1.51	0.12	0.02	6.59	0.77	0.34	0.12	0.04	0.01
579	21.74 +0.17	1.48	1.57	0.13	0.02	6.62	0.69	0.34	0.13	0.04	0.01
580	-21.57 +0.17	-1.45	+1.62	-0.13	+0.03	-6.66	-0.61	-0.34	+0.13	-0.04	-0.01
581	21.40 +0.17	1.43	1.68	0.13	0.03	6.70	0.53	0.34	0.13	0.04	0.01
582	21.23 +0.17	1.40	1.74	0.13	0.03	6.73	0.45	0.33	0.14	0.04	0.01
583	21.06 +0.18	1.37	1.79	0.14	0.04	6.77	0.36	0.33	0.14	0.04	0.01
584	20.88 +0.18	1.34	1.85	0.14	0.04	6.80	0.28	0.33	0.14	0.04	0.01
585	-20.70 +0.18	-1.31	+1.90	-0.14	+0.05	-6.83	-0.19	-0.33	+0.15	-0.04	-0.01
586	20.52 +0.19	1.28	1.96	0.14	0.05	6.86	0.11	0.33	0.15	0.04	0.01
587	20.33 +0.18	1.24	2.01	0.15	0.06	6.89	-0.02	0.32	0.15	0.04	0.01
588	20.15 +0.19	1.21	2.07	0.15	0.06	6.92	+0.07	0.32	0.16	0.04	-0.01
589	19.96 +0.20	1.17	2.12	0.15	0.07	6.94	0.15	0.32	0.16	0.04	0.00
590	-19.76 +0.19	-1.14	+2.17	-0.15	+0.07	-6.97	+0.24	-0.32	+0.16	-0.04	0.00
591	19.57 +0.20	1.10	2.23	0.15	0.08	7.00	0.33	0.32	0.16	0.04	0.00
592	19.37 +0.20	1.06	2.28	0.16	0.08	7.02	0.43	0.32	0.17	0.04	0.00
593	19.17 +0.20	1.03	2.33	0.16	0.09	7.04	0.52	0.31	0.17	0.04	0.00
594	18.97 +0.21	0.99	2.39	0.16	0.10	7.06	0.61	0.31	0.18	0.04	0.00
595	-18.76 +0.20	-0.95	+2.44	-0.16	+0.10	-7.08	+0.70	-0.31	+0.18	-0.05	0.00
596	18.56 +0.21	0.91	2.49	0.16	0.11	7.10	0.80	0.31	0.18	0.05	0.00
597	18.35 +0.21	0.87	2.54	0.16	0.11	7.12	0.89	0.30	0.18	0.05	0.00
598	18.14 +0.22	0.83	2.59	0.16	0.12	7.13	0.99	0.30	0.19	0.05	0.00
599	17.92 +0.22	0.79	2.65	0.16	0.13	7.14	1.09	0.30	0.19	0.05	0.00
600	-17.70	-0.75	+2.70	-0.16	+0.13	-7.15	+1.18	-0.30	+0.19	-0.05	0.00

TABLE VII.—Arg. 2. *Action of Saturn; secular variation.*

Arg.	(v. c. 0)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(v. s. 3)	(v. c. 3)
	"	"	"	"	"	"	"
0	+0.05	+1.39	+0.97	+1.83	+0.13	+0.14	+0.06
10	0.04	1.48	0.82	1.83	-0.06	0.15	0.04
20	0.03	1.55	0.66	1.81	0.25	0.16	+0.01
30	0.02	1.61	0.49	1.77	0.44	0.16	-0.01
40	+0.01	1.65	0.31	1.71	0.62	0.15	0.03
50	0.00	+1.67	+0.14	+1.64	-0.79	+0.15	-0.06
60	-0.01	1.68	-0.04	1.55	0.95	0.14	0.08
70	0.02	1.67	0.22	1.44	1.10	0.12	0.10
80	0.03	1.64	0.39	1.31	1.24	0.11	0.12
90	0.04	1.60	0.56	1.18	1.37	0.09	0.13
100	-0.05	+1.53	-0.72	+1.03	-1.49	+0.07	-0.14
110	0.06	1.45	0.88	0.87	1.58	0.04	0.15
120	0.07	1.36	1.02	0.70	1.66	+0.02	0.15
130	0.07	1.25	1.15	0.52	1.72	0.00	0.15
140	0.08	1.12	1.27	0.34	1.77	-0.02	0.15
150	-0.09	+0.99	-1.38	+0.16	-1.79	-0.04	-0.14
160	0.09	0.84	1.47	-0.03	1.80	0.06	0.13
170	0.09	0.68	1.55	0.22	1.79	0.08	0.11
180	0.10	0.52	1.61	0.40	1.76	0.09	0.10
190	0.10	0.35	1.66	0.58	1.71	0.10	0.08
200	-0.10	+0.18	-1.68	-0.76	-1.64	-0.10	-0.06
210	0.10	0.00	1.69	0.92	1.56	0.11	0.04
220	0.10	-0.18	1.68	1.08	1.46	0.11	0.03
230	0.09	0.35	1.66	1.23	1.34	0.10	-0.01
240	0.09	0.52	1.61	1.36	1.21	0.10	0.00
250	-0.08	-0.69	-1.55	-1.48	-1.06	-0.09	+0.02
260	0.08	0.85	1.47	1.59	0.90	0.08	0.03
270	0.07	1.00	1.37	1.68	0.73	0.07	0.03
280	0.06	1.14	1.26	1.75	0.55	0.06	0.04
290	0.06	1.27	1.14	1.80	0.37	0.05	0.04
300	-0.05	-1.39	-1.00	-1.83	-0.18	-0.04	+0.04
310	0.04	1.49	0.86	1.84	+0.01	0.03	0.04
320	0.03	1.57	0.70	1.83	0.20	0.02	0.04
330	0.02	1.63	0.53	1.80	0.39	0.02	0.03
340	-0.01	1.68	0.36	1.75	0.58	0.01	0.02
350	0.00	-1.71	-0.18	-1.68	+0.76	-0.01	+0.02
360	+0.01	1.72	0.00	1.60	0.94	0.01	0.01
370	0.02	1.71	+0.18	1.49	1.10	0.02	0.01
380	0.03	1.68	0.36	1.37	1.25	0.02	+0.01
390	0.04	1.63	0.54	1.23	1.39	0.03	0.00
400	+0.05	-1.56	+0.71	-1.07	+1.51	-0.04	0.00
410	0.06	1.48	0.87	0.91	1.61	0.04	+0.01
420	0.07	1.38	1.02	0.73	1.70	0.05	0.01
430	0.07	1.26	1.16	0.54	1.78	0.05	0.02
440	0.08	1.13	1.29	0.35	1.84	0.06	0.03
450	+0.09	-0.99	+1.41	-0.15	+1.86	-0.06	+0.04
460	0.09	0.83	1.51	+0.04	1.85	0.06	0.05
470	0.09	0.67	1.59	0.24	1.83	0.06	0.06
480	0.10	0.50	1.66	0.44	1.80	0.05	0.08
490	0.10	0.32	1.70	0.62	1.75	0.04	0.09
500	+0.10	-0.14	+1.72	+0.80	+1.67	-0.03	+0.10
510	0.10	+0.04	1.73	0.98	1.57	-0.02	0.11
520	0.10	0.22	1.72	1.14	1.46	0.00	0.12
530	0.09	0.39	1.69	1.28	1.33	+0.02	0.12
540	0.09	0.56	1.63	1.41	1.19	0.04	0.12
550	+0.08	+0.73	+1.56	+1.53	+1.03	+0.06	+0.12
560	0.08	0.88	1.47	1.63	0.86	0.08	0.11
570	0.07	1.03	1.37	1.71	0.68	0.09	0.10
580	0.06	1.16	1.25	1.77	0.50	0.11	0.09
590	0.06	1.28	1.12	1.81	0.32	0.13	0.08
600	+0.05	+1.39	+0.97	+1.83	+0.13	+0.14	+0.06

The numbers of this table are to be multiplied by T, the time after 1900 in terms of the century as the unit.

TABLE VIII.—Arg. 3. *Action of Jupiter.*

Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)
0	"	"	"	"	"	60	"	"	"	"	"
1	-21.48 -0.51	+3.33	-1.37	+0.10	-0.01	61	-46.09 -0.27	+2.65	-3.17	+0.07	-0.08
2	21.99 -0.51	3.32	1.41	0.10	0.01	62	46.36 -0.27	2.63	3.18	0.07	0.08
3	22.50 -0.50	3.31	1.46	0.10	0.01	63	46.63 -0.27	2.61	3.19	0.07	0.08
4	23.00 -0.51	3.30	1.51	0.10	0.02	64	46.90 -0.26	2.60	3.20	0.07	0.08
5	23.51 -0.50	3.29	1.55	0.10	0.02	65	47.16 -0.26	2.58	3.20	0.07	0.08
6	-24.01 -0.50	+3.28	-1.60	+0.10	-0.02	66	-47.42 -0.25	+2.56	-3.21	+0.07	-0.08
7	24.51 -0.50	3.28	1.64	0.10	0.02	67	47.67 -0.25	2.54	3.21	0.06	0.08
8	25.01 -0.49	3.27	1.69	0.10	0.02	68	47.92 -0.24	2.52	3.21	0.06	0.08
9	25.50 -0.49	3.26	1.73	0.09	0.02	69	48.16 -0.23	2.50	3.22	0.06	0.08
10	25.99 -0.49	3.25	1.77	0.09	0.03	70	48.39 -0.23	2.48	3.22	0.06	0.08
11	-26.48 -0.49	+3.24	-1.82	+0.09	-0.03	71	-48.62 -0.22	+2.46	-3.22	+0.06	-0.08
12	26.97 -0.48	3.23	1.86	0.09	0.03	72	48.84 -0.22	2.44	3.22	0.06	0.08
13	27.45 -0.48	3.22	1.90	0.09	0.03	73	49.06 -0.21	2.41	3.22	0.06	0.08
14	27.93 -0.47	3.21	1.94	0.09	0.04	74	49.27 -0.21	2.39	3.22	0.05	0.08
15	28.40 -0.47	3.20	1.98	0.09	0.04	75	49.48 -0.20	2.37	3.22	0.05	0.07
16	-28.87 -0.47	+3.20	-2.02	+0.09	-0.04	76	-49.68 -0.20	+2.35	-3.21	+0.05	-0.07
17	29.34 -0.47	3.19	2.06	0.09	0.04	77	49.88 -0.19	2.33	3.21	0.05	0.07
18	29.81 -0.46	3.18	2.10	0.09	0.04	78	50.07 -0.18	2.30	3.21	0.05	0.07
19	30.27 -0.46	3.17	2.14	0.09	0.04	79	50.25 -0.18	2.28	3.20	0.04	0.07
20	30.73 -0.46	3.16	2.18	0.09	0.05	80	50.43 -0.18	2.25	3.20	0.04	0.07
21	-31.19 -0.45	+3.15	-2.22	+0.09	-0.05	81	-50.61 -0.17	+2.23	-3.19	+0.04	-0.07
22	31.64 -0.45	3.14	2.26	0.09	0.05	82	50.78 -0.16	2.20	3.18	0.04	0.07
23	32.09 -0.45	3.13	2.29	0.09	0.05	83	50.94 -0.16	2.18	3.18	0.04	0.07
24	32.54 -0.44	3.12	2.33	0.09	0.05	84	51.10 -0.15	2.15	3.17	0.03	0.07
25	32.98 -0.44	3.11	2.36	0.09	0.05	85	51.25 -0.14	2.12	3.16	0.03	0.07
26	-33.42 -0.43	+3.10	-2.40	+0.09	-0.05	86	-51.39 -0.14	+2.10	-3.15	+0.03	-0.07
27	33.85 -0.43	3.09	2.43	0.09	0.06	87	51.53 -0.14	2.07	3.13	0.03	0.07
28	34.28 -0.43	3.08	2.47	0.09	0.06	88	51.67 -0.13	2.04	3.12	0.02	0.07
29	34.71 -0.42	3.07	2.50	0.09	0.06	89	51.80 -0.12	2.01	3.11	0.02	0.06
30	35.13 -0.42	3.06	2.53	0.09	0.06	90	51.92 -0.12	1.98	3.10	0.02	0.06
31	-35.55 -0.42	+3.05	-2.56	+0.09	-0.06	91	-52.04 -0.11	+1.95	-3.09	+0.02	-0.06
32	35.97 -0.41	3.04	2.59	0.09	0.06	92	52.15 -0.10	1.92	3.07	0.01	0.06
33	36.38 -0.41	3.03	2.62	0.09	0.06	93	52.25 -0.10	1.89	3.06	0.01	0.06
34	36.79 -0.40	3.02	2.65	0.09	0.06	94	52.35 -0.10	1.86	3.04	+0.01	0.06
35	37.19 -0.40	3.01	2.68	0.09	0.07	95	52.45 -0.09	1.83	3.03	0.00	0.06
36	-37.59 -0.39	+3.00	-2.71	+0.09	-0.07	96	-52.54 -0.08	+1.80	-3.01	0.00	-0.06
37	37.98 -0.39	2.99	2.74	0.09	0.07	97	52.62 -0.07	1.76	2.99	0.00	0.06
38	38.37 -0.39	2.98	2.77	0.09	0.07	98	52.69 -0.07	1.73	2.97	0.00	0.06
39	38.76 -0.38	2.96	2.79	0.09	0.07	99	52.76 -0.07	1.70	2.96	-0.01	0.06
40	39.14 -0.38	2.95	2.82	0.09	0.07	100	52.83 -0.06	1.66	2.94	0.01	0.06
41	-39.52 -0.37	+2.94	-2.84	+0.09	-0.07	101	-52.89 -0.05	+1.63	-2.92	-0.01	-0.06
42	39.89 -0.37	2.93	2.87	0.09	0.07	102	52.94 -0.05	1.59	2.90	0.02	0.06
43	40.26 -0.36	2.91	2.89	0.09	0.07	103	52.99 -0.04	1.56	2.88	0.02	0.06
44	40.62 -0.36	2.90	2.91	0.09	0.07	104	53.03 -0.04	1.52	2.86	0.02	0.06
45	40.98 -0.36	2.89	2.93	0.09	0.07	105	53.07 -0.03	1.49	2.83	0.02	0.06
46	-41.34 -0.35	+2.88	-2.95	+0.09	-0.07	106	-53.10 -0.02	+1.45	-2.81	-0.03	-0.06
47	41.69 -0.35	2.86	2.97	0.08	0.08	107	53.12 -0.02	1.41	2.79	0.03	0.06
48	42.04 -0.34	2.85	2.99	0.08	0.08	108	53.14 -0.01	1.37	2.76	0.03	0.05
49	42.38 -0.33	2.83	3.01	0.08	0.08	109	53.15 0.00	1.33	2.74	0.04	0.05
50	42.71 -0.33	2.82	3.03	0.08	0.08	110	53.15 0.00	1.29	2.71	0.04	0.05
51	-43.04 -0.33	+2.81	-3.05	+0.08	-0.08	111	-53.15 0.00	+1.25	-2.69	-0.04	-0.05
52	43.37 -0.32	2.79	3.06	0.08	0.08	112	53.15 +0.01	1.21	2.66	0.05	0.05
53	43.69 -0.32	2.78	3.08	0.08	0.08	113	53.14 +0.02	1.17	2.64	0.05	0.05
54	44.01 -0.31	2.76	3.09	0.08	0.08	114	53.12 +0.02	1.13	2.61	0.05	0.05
55	44.32 -0.31	2.75	3.11	0.08	0.08	115	53.10 +0.03	1.09	2.58	0.06	0.05
56	-44.63 -0.30	+2.73	-3.12	+0.08	-0.08	116	-53.07 +0.04	+1.05	-2.56	-0.06	-0.05
57	44.93 -0.30	2.72	3.13	0.08	0.08	117	53.03 +0.04	1.01	2.53	0.06	0.05
58	45.23 -0.29	2.70	3.15	0.08	0.08	118	52.99 +0.04	0.96	2.50	0.07	0.05
59	45.52 -0.29	2.68	3.16	0.08	0.08	119	52.95 +0.05	0.92	2.47	0.07	0.05
60	45.81 -0.28	2.67	3.17	0.07	0.08	120	52.90 +0.06	0.87	2.44	0.07	0.05
61	-46.09	+2.65	-3.17	+0.07	-0.08						

TABLE VIII.—Arg. 3. *Action of Jupiter.*

Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)
	"	"	"	"	"		"	"	"	"	"
120	-52.84 +0.07	+0.83	-2.41	-0.08	-0.05	180	-39.37 +0.37	-2.49	-0.48	-0.24	-0.09
121	52.77 +0.07	0.78	2.38	0.08	0.05	181	39.00 +0.38	2.55	0.45	0.24	0.09
122	52.70 +0.07	0.74	2.35	0.08	0.05	182	38.62 +0.38	2.61	0.42	0.24	0.09
123	52.63 +0.08	0.69	2.32	0.09	0.05	183	38.24 +0.39	2.67	0.39	0.24	0.10
124	52.55 +0.09	0.65	2.29	0.09	0.05	184	37.85 +0.39	2.73	0.37	0.25	0.10
125	-52.46 +0.09	+0.60	-2.26	-0.09	-0.05	185	-37.46 +0.39	-2.79	-0.34	-0.25	-0.10
126	52.37 +0.10	0.55	2.23	0.10	0.05	186	37.07 +0.40	2.85	0.31	0.25	0.10
127	52.27 +0.11	0.50	2.20	0.10	0.05	187	36.67 +0.40	2.91	0.29	0.25	0.10
128	52.16 +0.11	0.46	2.17	0.10	0.05	188	36.27 +0.41	2.97	0.26	0.25	0.10
129	52.05 +0.11	0.41	2.14	0.11	0.05	189	35.86 +0.41	3.03	0.24	0.25	0.10
130	-51.94 +0.12	+0.36	-2.11	-0.11	-0.05	190	-35.45 +0.42	-3.09	-0.21	-0.25	-0.10
131	51.82 +0.13	0.31	2.07	0.12	0.05	191	35.03 +0.42	3.15	0.19	0.25	0.10
132	51.69 +0.13	0.26	2.04	0.12	0.05	192	34.61 +0.42	3.21	0.16	0.25	0.10
133	51.56 +0.14	0.21	2.01	0.12	0.05	193	34.19 +0.42	3.26	0.14	0.25	0.10
134	51.42 +0.15	0.16	1.97	0.12	0.05	194	33.77 +0.43	3.32	0.12	0.25	0.11
135	-51.27 +0.15	+0.10	-1.94	-0.13	-0.05	195	-33.34 +0.43	-3.38	-0.10	-0.26	-0.11
136	51.12 +0.15	+0.05	1.91	0.13	0.05	196	32.91 +0.43	3.44	0.07	0.26	0.11
137	50.97 +0.16	0.00	1.87	0.14	0.05	197	32.48 +0.44	3.49	0.05	0.26	0.11
138	50.81 +0.17	-0.05	1.84	0.14	0.05	198	32.04 +0.44	3.55	0.03	0.26	0.11
139	50.64 +0.17	0.11	1.81	0.14	0.05	199	31.60 +0.45	3.61	-0.01	0.26	0.11
140	-50.47 +0.18	-0.16	-1.77	-0.14	-0.05	200	-31.15 +0.45	-3.66	+0.01	-0.26	-0.11
141	50.29 +0.18	0.21	1.74	0.15	0.05	201	30.70 +0.45	3.72	0.03	0.26	0.11
142	50.11 +0.19	0.27	1.71	0.15	0.06	202	30.25 +0.46	3.78	0.05	0.26	0.11
143	49.92 +0.19	0.32	1.67	0.16	0.06	203	29.79 +0.46	3.83	0.07	0.26	0.11
144	49.73 +0.20	0.37	1.64	0.16	0.06	204	29.33 +0.46	3.89	0.09	0.26	0.11
145	-49.53 +0.21	-0.43	-1.60	-0.16	-0.06	205	-28.87 +0.46	-3.94	+0.11	-0.26	-0.12
146	49.32 +0.21	0.48	1.57	0.16	0.06	206	28.41 +0.47	3.99	0.12	0.26	0.12
147	49.11 +0.21	0.54	1.53	0.17	0.06	207	27.94 +0.47	4.05	0.14	0.26	0.12
148	48.90 +0.22	0.60	1.50	0.17	0.06	208	27.47 +0.47	4.10	0.16	0.26	0.12
149	48.68 +0.23	0.65	1.46	0.17	0.06	209	27.00 +0.48	4.15	0.17	0.26	0.12
150	-48.45 +0.23	-0.71	-1.43	-0.18	-0.06	210	-26.52 +0.48	-4.20	+0.19	-0.26	-0.12
151	48.22 +0.24	0.77	1.40	0.18	0.06	211	26.04 +0.48	4.25	0.20	0.26	0.12
152	47.98 +0.24	0.83	1.36	0.18	0.06	212	25.56 +0.48	4.31	0.22	0.26	0.12
153	47.74 +0.25	0.88	1.33	0.18	0.06	213	25.08 +0.49	4.36	0.23	0.25	0.12
154	47.49 +0.25	0.94	1.29	0.19	0.06	214	24.59 +0.49	4.41	0.24	0.25	0.12
155	-47.24 +0.25	-1.00	-1.26	-0.19	-0.06	215	-24.10 +0.49	-4.46	+0.26	-0.25	-0.12
156	46.99 +0.26	1.06	1.23	0.19	0.06	216	23.61 +0.50	4.50	0.27	0.25	0.12
157	46.73 +0.27	1.11	1.19	0.20	0.07	217	23.11 +0.50	4.55	0.28	0.25	0.12
158	46.46 +0.27	1.17	1.16	0.20	0.07	218	22.61 +0.50	4.60	0.30	0.25	0.12
159	46.19 +0.28	1.23	1.13	0.20	0.07	219	22.11 +0.50	4.65	0.31	0.25	0.12
160	-45.91 +0.28	-1.29	-1.09	-0.20	-0.07	220	-21.61 +0.50	-4.69	+0.32	-0.25	-0.12
161	45.63 +0.29	1.35	1.06	0.21	0.07	221	21.11 +0.51	4.74	0.33	0.25	0.12
162	45.34 +0.29	1.41	1.03	0.21	0.07	222	20.60 +0.51	4.78	0.34	0.25	0.12
163	45.05 +0.30	1.47	0.99	0.21	0.07	223	20.09 +0.51	4.83	0.35	0.25	0.12
164	44.75 +0.30	1.53	0.96	0.21	0.07	224	19.58 +0.51	4.87	0.36	0.25	0.12
165	-44.45 +0.31	-1.59	-0.93	-0.22	-0.07	225	-19.07 +0.51	-4.92	+0.37	-0.25	-0.12
166	44.14 +0.31	1.65	0.90	0.22	0.08	226	18.56 +0.52	4.96	0.38	0.24	0.12
167	43.83 +0.31	1.71	0.87	0.22	0.08	227	18.04 +0.52	5.00	0.38	0.24	0.12
168	43.52 +0.32	1.77	0.83	0.22	0.08	228	17.52 +0.52	5.04	0.39	0.24	0.12
169	43.20 +0.33	1.83	0.80	0.22	0.08	229	17.00 +0.52	5.08	0.40	0.24	0.11
170	-42.87 +0.33	-1.89	-0.77	-0.23	-0.08	230	-16.48 +0.53	-5.12	+0.40	-0.24	-0.11
171	42.54 +0.34	1.95	0.74	0.23	0.08	231	15.95 +0.53	5.16	0.41	0.24	0.11
172	42.20 +0.34	2.01	0.71	0.23	0.08	232	15.42 +0.53	5.20	0.42	0.24	0.11
173	41.86 +0.34	2.07	0.68	0.23	0.08	233	14.90 +0.53	5.24	0.42	0.24	0.11
174	41.52 +0.35	2.13	0.65	0.23	0.08	234	14.37 +0.53	5.27	0.42	0.24	0.11
175	-41.17 +0.35	-2.19	-0.62	-0.23	-0.09	235	-13.84 +0.53	-5.31	+0.43	-0.24	-0.11
176	40.82 +0.35	2.25	0.59	0.24	0.09	236	13.31 +0.53	5.34	0.43	0.24	0.11
177	40.47 +0.36	2.31	0.56	0.24	0.09	237	12.78 +0.54	5.38	0.44	0.24	0.11
178	40.11 +0.37	2.37	0.53	0.24	0.09	238	12.24 +0.54	5.41	0.44	0.24	0.10
179	39.74 +0.37	2.43	0.50	0.24	0.09	239	11.70 +0.53	5.44	0.44	0.23	0.10
180	-39.37	-2.49	-0.48	-0.24	-0.09	240	-11.17	-5.47	+0.45	-0.23	-0.10

TABLE VIII.—Arg. 3. *Action of Jupiter.*

Arg.	(v. c. o)	(v. s. i)	(v. c. i)	(v. s. 2)	(v. c. 2)	Arg.	(v. c. o)	(v. s. i)	(v. c. i)	(v. s. 2)	(v. c. 2)
	"	"	"	"	"		"	"	"	"	"
240	-11. 17 +0.54	-5. 47	+0. 45	-0. 23	-0. 10	300	+21. 12 +0.50	-5. 60	+0. 21	-0. 22	+0. 06
241	10. 63 +0.54	5. 50	0. 45	0. 23	0. 10	301	21. 62 +0.50	5. 57	0. 21	0. 22	0. 06
242	10. 09 +0.54	5. 53	0. 45	0. 23	0. 10	302	22. 12 +0.50	5. 54	0. 20	0. 22	0. 06
243	9. 55 +0.54	5. 56	0. 45	0. 23	0. 10	303	22. 62 +0.50	5. 51	0. 20	0. 23	0. 06
244	9. 01 +0.54	5. 59	0. 45	0. 23	0. 10	304	23. 12 +0.49	5. 47	0. 20	0. 23	0. 07
245	- 8. 47 +0.55	-5. 62	+0. 45	-0. 23	-0. 10	305	+23. 61 +0.49	-5. 44	+0. 19	-0. 23	+0. 07
246	7. 92 +0.54	5. 65	0. 45	0. 23	0. 09	306	24. 10 +0.49	5. 41	0. 19	0. 23	0. 07
247	7. 38 +0.54	5. 67	0. 45	0. 23	0. 09	307	24. 59 +0.49	5. 37	0. 19	0. 23	0. 08
248	6. 84 +0.54	5. 70	0. 45	0. 22	0. 09	308	25. 08 +0.49	5. 34	0. 18	0. 23	0. 08
249	6. 29 +0.55	5. 72	0. 45	0. 22	0. 09	309	25. 56 +0.48	5. 30	0. 18	0. 23	0. 08
250	- 5. 74 +0.54	-5. 74	+0. 45	-0. 22	-0. 08	310	+26. 04 +0.48	-5. 26	+0. 18	-0. 23	+0. 08
251	5. 20 +0.55	5. 77	0. 45	0. 22	0. 08	311	26. 52 +0.47	5. 22	0. 18	0. 24	0. 09
252	4. 65 +0.55	5. 79	0. 45	0. 22	0. 08	312	26. 99 +0.47	5. 18	0. 17	0. 24	0. 09
253	4. 10 +0.55	5. 81	0. 45	0. 22	0. 08	313	27. 46 +0.47	5. 14	0. 17	0. 24	0. 09
254	3. 55 +0.55	5. 83	0. 44	0. 22	0. 08	314	27. 93 +0.47	5. 10	0. 17	0. 24	0. 10
255	- 3. 00 +0.54	-5. 84	+0. 44	-0. 22	-0. 07	315	+28. 40 +0.47	-5. 06	+0. 17	-0. 24	+0. 10
256	2. 46 +0.55	5. 86	0. 44	0. 22	0. 07	316	28. 87 +0.46	5. 02	0. 17	0. 24	0. 10
257	1. 91 +0.55	5. 88	0. 44	0. 22	0. 07	317	29. 33 +0.46	4. 97	0. 17	0. 24	0. 10
258	1. 36 +0.55	5. 89	0. 43	0. 22	0. 07	318	29. 79 +0.45	4. 93	0. 17	0. 25	0. 11
259	0. 81 +0.55	5. 90	0. 43	0. 22	0. 06	319	30. 24 +0.45	4. 88	0. 17	0. 25	0. 11
260	- 0. 26 +0.55	-5. 92	+0. 43	-0. 22	-0. 06	320	+30. 69 +0.45	-4. 84	+0. 17	-0. 25	+0. 11
261	+ 0. 29 +0.55	5. 93	0. 42	0. 22	0. 06	321	31. 14 +0.44	4. 79	0. 17	0. 25	0. 11
262	0. 84 +0.55	5. 94	0. 42	0. 22	0. 06	322	31. 58 +0.44	4. 74	0. 17	0. 25	0. 12
263	1. 39 +0.55	5. 95	0. 41	0. 22	0. 06	323	32. 02 +0.44	4. 70	0. 17	0. 25	0. 12
264	1. 94 +0.55	5. 96	0. 41	0. 21	0. 05	324	32. 46 +0.43	4. 65	0. 17	0. 25	0. 12
265	+ 2. 49 +0.54	-5. 97	+0. 40	-0. 21	-0. 05	325	+32. 89 +0.43	-4. 60	+0. 18	-0. 26	+0. 12
266	3. 03 +0.55	5. 97	0. 40	0. 21	0. 05	326	33. 32 +0.43	4. 55	0. 18	0. 26	0. 12
267	3. 58 +0.55	5. 98	0. 40	0. 21	0. 04	327	33. 75 +0.42	4. 49	0. 18	0. 26	0. 12
268	4. 13 +0.55	5. 98	0. 39	0. 21	0. 04	328	34. 17 +0.42	4. 44	0. 18	0. 26	0. 13
269	4. 68 +0.54	5. 99	0. 39	0. 21	0. 04	329	34. 59 +0.42	4. 39	0. 19	0. 26	0. 13
270	+ 5. 22 +0.55	-5. 99	+0. 38	-0. 21	-0. 04	330	+35. 01 +0.41	-4. 34	+0. 19	-0. 26	+0. 13
271	5. 77 +0.55	5. 99	0. 38	0. 21	0. 03	331	35. 42 +0.41	4. 28	0. 20	0. 26	0. 13
272	6. 32 +0.54	5. 99	0. 37	0. 21	0. 03	332	35. 83 +0.41	4. 23	0. 20	0. 27	0. 14
273	6. 86 +0.55	5. 99	0. 37	0. 21	0. 03	333	36. 24 +0.40	4. 17	0. 21	0. 27	0. 14
274	7. 41 +0.54	5. 99	0. 36	0. 21	0. 02	334	36. 64 +0.39	4. 11	0. 21	0. 27	0. 14
275	+ 7. 95 +0.54	-5. 99	+0. 35	-0. 21	-0. 02	335	+37. 03 +0.39	-4. 06	+0. 22	-0. 27	+0. 14
276	8. 49 +0.55	5. 99	0. 35	0. 21	0. 02	336	37. 42 +0.39	4. 00	0. 22	0. 27	0. 14
277	9. 04 +0.54	5. 98	0. 34	0. 21	0. 02	337	37. 81 +0.39	3. 94	0. 23	0. 27	0. 14
278	9. 58 +0.54	5. 98	0. 34	0. 21	0. 01	338	38. 20 +0.38	3. 88	0. 24	0. 28	0. 15
279	10. 12 +0.53	5. 97	0. 33	0. 21	0. 01	339	38. 58 +0.38	3. 82	0. 24	0. 28	0. 15
280	+10. 65 +0.54	-5. 96	+0. 32	-0. 21	-0. 01	340	+38. 96 +0.37	-3. 76	+0. 25	-0. 28	+0. 15
281	11. 19 +0.54	5. 96	0. 32	0. 21	0. 00	341	39. 33 +0.37	3. 70	0. 26	0. 28	0. 15
282	11. 73 +0.53	5. 95	0. 31	0. 21	0. 00	342	39. 70 +0.36	3. 64	0. 27	0. 28	0. 15
283	12. 26 +0.54	5. 94	0. 31	0. 21	0. 00	343	40. 06 +0.36	3. 58	0. 28	0. 28	0. 15
284	12. 80 +0.53	5. 92	0. 30	0. 21	+0. 01	344	40. 42 +0.36	3. 52	0. 29	0. 28	0. 15
285	+13. 33 +0.53	-5. 91	+0. 29	-0. 21	+0. 01	345	+40. 78 +0.35	-3. 45	+0. 30	-0. 28	+0. 15
286	13. 86 +0.53	5. 90	0. 29	0. 21	0. 01	346	41. 13 +0.35	3. 39	0. 31	0. 28	0. 16
287	14. 39 +0.53	5. 88	0. 28	0. 21	0. 02	347	41. 48 +0.34	3. 33	0. 32	0. 29	0. 16
288	14. 92 +0.53	5. 87	0. 28	0. 22	0. 02	348	41. 82 +0.34	3. 26	0. 33	0. 29	0. 16
289	15. 45 +0.62	5. 85	0. 27	0. 22	0. 02	349	42. 16 +0.33	3. 20	0. 34	0. 29	0. 16
290	+15. 97 +0.52	-5. 83	+0. 27	-0. 22	+0. 02	350	+42. 49 +0.33	-3. 13	+0. 36	-0. 29	+0. 16
291	16. 49 +0.52	5. 81	0. 26	0. 22	0. 03	351	42. 82 +0.32	3. 06	0. 36	0. 29	0. 16
292	17. 01 +0.52	5. 79	0. 25	0. 22	0. 03	352	42. 14 +0.32	3. 00	0. 38	0. 29	0. 16
293	17. 53 +0.52	5. 77	0. 25	0. 22	0. 04	353	43. 46 +0.32	2. 93	0. 39	0. 29	0. 16
294	18. 05 +0.52	5. 75	0. 24	0. 22	0. 04	354	43. 78 +0.31	2. 87	0. 40	0. 29	0. 16
295	+18. 57 +0.51	-5. 73	+0. 24	-0. 22	+0. 04	355	+44. 09 +0.30	-2. 80	+0. 41	-0. 30	+0. 16
296	19. 08 +0.51	5. 70	0. 23	0. 22	0. 04	356	44. 39 +0.30	2. 73	0. 43	0. 30	0. 16
297	19. 59 +0.51	5. 68	0. 23	0. 22	0. 05	357	44. 69 +0.30	2. 67	0. 44	0. 30	0. 16
298	20. 10 +0.51	5. 65	0. 22	0. 22	0. 05	358	44. 99 +0.29	2. 60	0. 46	0. 30	0. 16
299	20. 61 +0.51	5. 62	0. 22	0. 22	0. 05	359	45. 28 +0.29	2. 53	0. 47	0. 30	0. 16
300	+21. 12	-5. 60	+0. 21	-0. 22	+0. 06	360	+45. 57	-2. 46	+0. 49	-0. 30	+0. 16

TABLE VIII.—Arg. 3. *Action of Jupiter.*

Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)
	"	"	"	"	"		"	"	"	"	"
360	+45.57 +0.28	-2.46	+0.49	-0.30	+0.16	420	+52.87 -0.05	+1.55	+1.91	-0.21	+0.12
361	45.85 +0.28	2.39	0.51	0.30	0.16	421	52.82 -0.06	1.61	1.94	0.21	0.12
362	46.13 +0.27	2.32	0.52	0.30	0.16	422	52.76 -0.06	1.66	1.96	0.20	0.12
363	46.40 +0.27	2.25	0.54	0.30	0.16	423	52.70 -0.07	1.72	1.99	0.20	0.12
364	46.67 +0.26	2.18	0.56	0.30	0.16	424	52.63 -0.08	1.78	2.01	0.20	0.12
365	+46.93 +0.25	-2.12	+0.57	-0.30	+0.16	425	+52.55 -0.08	+1.83	+2.04	-0.19	+0.11
366	47.18 +0.25	2.05	0.59	0.30	0.16	426	52.47 -0.09	1.89	2.06	0.19	0.11
367	47.43 +0.25	1.98	0.61	0.30	0.16	427	52.38 -0.09	1.94	2.09	0.18	0.11
368	47.68 +0.24	1.91	0.63	0.30	0.16	428	52.29 -0.10	1.99	2.11	0.18	0.11
369	47.92 +0.23	1.84	0.65	0.30	0.16	429	52.19 -0.10	2.04	2.14	0.18	0.11
370	+48.15 +0.23	-1.77	+0.67	-0.30	+0.16	430	+52.09 -0.11	+2.09	+2.16	-0.17	-0.11
371	48.38 +0.23	1.70	0.69	0.30	0.16	431	51.98 -0.12	2.14	2.19	0.17	0.11
372	48.61 +0.22	1.63	0.71	0.30	0.16	432	51.86 -0.12	2.19	2.21	0.17	0.11
373	48.83 +0.21	1.56	0.73	0.30	0.16	433	51.74 -0.13	2.24	2.24	0.16	0.11
374	49.04 +0.21	1.48	0.75	0.30	0.16	434	51.61 -0.13	2.29	2.26	0.16	0.11
375	+49.25 +0.21	-1.41	+0.77	-0.30	+0.16	435	+51.48 -0.14	+2.34	+2.28	-0.16	-0.11
376	49.46 +0.20	1.34	0.79	0.30	0.16	436	51.34 -0.14	2.39	2.30	0.15	0.11
377	49.66 +0.19	1.27	0.81	0.30	0.16	437	51.20 -0.15	2.43	2.33	0.15	0.11
378	49.85 +0.19	1.20	0.83	0.30	0.16	438	51.05 -0.16	2.48	2.35	0.14	0.11
379	50.04 +0.18	1.13	0.86	0.30	0.16	439	50.89 -0.16	2.53	2.37	0.14	0.11
380	+50.22 +0.17	-1.06	+0.88	-0.30	+0.16	440	+50.73 -0.17	+2.57	+2.39	-0.14	+0.11
381	50.39 +0.17	0.99	0.90	0.30	0.16	441	50.56 -0.17	2.62	2.41	0.13	0.11
382	50.56 +0.17	0.92	0.93	0.30	0.16	442	50.39 -0.18	2.66	2.43	0.13	0.10
383	50.73 +0.16	0.85	0.95	0.29	0.15	443	50.21 -0.18	2.70	2.45	0.12	0.10
384	50.89 +0.16	0.78	0.97	0.29	0.15	444	50.03 -0.19	2.74	2.47	0.12	0.10
385	+51.05 +0.15	-0.71	+0.99	-0.29	+0.15	445	+49.84 -0.19	+2.78	+2.49	-0.12	+0.10
386	51.20 +0.14	0.64	1.02	0.29	0.15	446	49.65 -0.20	2.82	2.51	0.11	0.10
387	51.34 +0.14	0.57	1.04	0.29	0.15	447	49.45 -0.21	2.86	2.53	0.11	0.10
388	51.48 +0.13	0.50	1.07	0.29	0.15	448	49.24 -0.21	2.90	2.55	0.10	0.10
389	51.61 +0.13	0.43	1.09	0.29	0.15	449	49.03 -0.22	2.94	2.57	0.10	0.10
390	+51.74 +0.12	-0.36	+1.12	-0.29	+0.15	450	+48.81 -0.22	+2.98	+2.59	-0.10	+0.10
391	51.86 +0.12	0.29	1.14	0.28	0.15	451	48.59 -0.23	3.01	2.60	0.09	0.10
392	51.98 +0.11	0.23	1.17	0.28	0.15	452	48.36 -0.23	3.05	2.62	0.09	0.10
393	52.09 +0.10	0.16	1.19	0.28	0.14	453	48.13 -0.24	3.09	2.63	0.08	0.10
394	52.19 +0.10	0.09	1.22	0.28	0.14	454	47.89 -0.25	3.12	2.65	0.08	0.10
395	+52.29 +0.09	-0.02	+1.24	-0.28	+0.14	455	+47.64 -0.25	+3.15	+2.66	-0.08	+0.10
396	52.38 +0.09	+0.05	1.27	0.28	0.14	456	47.39 -0.25	3.19	2.68	0.07	0.10
397	52.47 +0.08	0.11	1.29	0.27	0.14	457	47.14 -0.26	3.22	2.69	0.07	0.10
398	52.55 +0.07	0.18	1.32	0.27	0.14	458	46.88 -0.26	3.25	2.71	0.06	0.10
399	52.62 +0.07	0.25	1.35	0.27	0.14	459	46.62 -0.27	3.28	2.72	0.06	0.10
400	+52.69 +0.07	+0.31	+1.38	-0.27	+0.14	460	+46.35 -0.28	+3.31	+2.73	-0.06	+0.10
401	52.76 +0.06	0.38	1.40	0.27	0.14	461	46.07 -0.28	3.34	2.74	0.05	0.10
402	52.82 +0.05	0.45	1.43	0.26	0.13	462	45.79 -0.28	3.37	2.75	0.05	0.10
403	52.87 +0.05	0.51	1.46	0.26	0.13	463	45.51 -0.29	3.40	2.76	0.04	0.10
404	52.92 +0.04	0.58	1.48	0.26	0.13	464	45.22 -0.30	3.43	2.77	0.04	0.11
405	+52.96 +0.03	+0.64	+1.51	-0.26	+0.13	465	+44.92 -0.30	+3.46	+2.78	-0.04	+0.11
406	52.99 +0.03	0.71	1.54	0.25	0.13	466	44.62 -0.31	3.48	2.79	0.03	0.11
407	53.02 +0.02	0.77	1.56	0.25	0.13	467	44.31 -0.31	3.51	2.80	0.03	0.11
408	53.04 +0.02	0.83	1.59	0.25	0.13	468	44.00 -0.31	3.53	2.80	0.03	0.11
409	53.06 +0.01	0.90	1.62	0.24	0.13	469	43.69 -0.32	3.56	2.81	0.02	0.11
410	+53.07 +0.01	+0.96	+1.64	-0.24	+0.13	470	+43.37 -0.32	+3.58	+2.82	-0.02	+0.11
411	53.08 0.00	1.02	1.67	0.24	0.13	471	43.05 -0.33	3.60	2.83	0.02	0.11
412	53.08 -0.01	1.08	1.70	0.24	0.13	472	42.72 -0.34	3.62	2.83	0.01	0.11
413	53.07 -0.01	1.14	1.72	0.23	0.12	473	42.38 -0.34	3.65	2.84	0.01	0.11
414	53.06 -0.02	1.20	1.75	0.23	0.12	474	42.04 -0.34	3.67	2.84	-0.01	0.11
415	+53.04 -0.02	+1.26	+1.78	-0.23	+0.12	475	+41.70 -0.35	+3.69	+2.84	0.00	+0.11
416	53.02 -0.03	1.32	1.80	0.22	0.12	476	41.35 -0.35	3.71	2.84	0.00	0.11
417	52.99 -0.03	1.38	1.83	0.22	0.12	477	41.00 -0.36	3.73	2.84	0.00	0.11
418	52.96 -0.04	1.43	1.86	0.22	0.12	478	40.64 -0.36	3.74	2.85	+0.01	0.11
419	52.92 -0.05	1.49	1.88	0.21	0.12	479	40.28 -0.37	3.76	2.85	0.01	0.11
420	+52.87	+1.55	+1.91	-0.21	+0.12	480	+39.91	+3.78	+2.85	+0.01	+0.11

TABLE VIII.—Arg. 3. *Action of Jupiter.*

Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)
	"	"	"	"	"		"	"	"	"	"
480	+39.91 -0.37	+3.78	+2.85	+0.01	+0.11	540	+11.47 -0.55	+3.89	+1.52	+0.10	+0.11
481	39.54 -0.37	3.79	2.84	0.02	0.11	541	10.92 -0.55	3.88	1.48	0.10	0.11
482	39.17 -0.38	3.81	2.84	0.02	0.11	542	10.37 -0.55	3.87	1.44	0.10	0.11
483	38.79 -0.39	3.82	2.84	0.02	0.11	543	9.82 -0.55	3.86	1.40	0.10	0.11
484	38.40 -0.39	3.84	2.84	0.03	0.11	544	9.27 -0.56	3.85	1.36	0.10	0.11
485	+38.01 -0.39	+3.85	+2.83	+0.03	+0.12	545	+8.71 -0.55	+3.85	+1.31	+0.10	+0.10
486	37.62 -0.40	3.87	2.83	0.03	0.12	546	8.16 -0.56	3.84	1.27	0.10	0.10
487	37.22 -0.40	3.88	2.82	0.03	0.12	547	7.60 -0.55	3.83	1.22	0.10	0.10
488	36.82 -0.40	3.89	2.82	0.04	0.12	548	7.05 -0.56	3.82	1.18	0.10	0.10
489	36.42 -0.41	3.90	2.81	0.04	0.12	549	6.49 -0.55	3.81	1.14	0.10	0.10
490	+36.01 -0.41	+3.91	+2.80	+0.04	+0.12	550	+5.94 -0.56	+3.80	+1.09	+0.10	+0.10
491	35.60 -0.42	3.92	2.79	0.04	0.12	551	5.38 -0.56	3.79	1.04	0.10	0.10
492	35.18 -0.42	3.93	2.78	0.05	0.12	552	4.82 -0.56	3.78	1.00	0.10	0.10
493	34.76 -0.43	3.94	2.77	0.05	0.12	553	4.26 -0.56	3.77	0.95	0.10	0.09
494	34.33 -0.43	3.95	2.76	0.05	0.12	554	3.70 -0.56	3.76	0.91	0.10	0.09
495	+33.90 -0.43	+3.96	+2.75	+0.05	+0.12	555	+3.14 -0.56	+3.75	+0.86	+0.10	+0.09
496	33.47 -0.44	3.96	2.74	0.06	0.12	556	2.58 -0.56	3.75	0.81	0.10	0.09
497	33.03 -0.44	3.97	2.73	0.06	0.12	557	2.02 -0.56	3.74	0.76	0.10	0.09
498	32.59 -0.44	3.98	2.71	0.06	0.12	558	1.46 -0.56	3.73	0.72	0.10	0.09
499	32.15 -0.45	3.98	2.70	0.06	0.12	559	0.90 -0.56	3.72	0.67	0.10	0.08
500	+31.70 -0.45	+3.99	+2.69	+0.06	+0.12	560	+0.34 -0.56	+3.71	+0.62	+0.10	+0.08
501	31.25 -0.46	3.99	2.67	0.07	0.12	561	-0.22 -0.56	3.70	0.57	0.10	0.08
502	30.79 -0.46	4.00	2.65	0.07	0.12	562	0.78 -0.56	3.69	0.52	0.10	0.08
503	30.33 -0.46	4.00	2.64	0.07	0.12	563	1.34 -0.56	3.68	0.47	0.10	0.08
504	29.87 -0.46	4.01	2.62	0.07	0.12	564	1.90 -0.56	3.67	0.42	0.10	0.08
505	+29.41 -0.47	+4.01	+2.60	+0.07	+0.12	565	-2.46 -0.56	+3.66	+0.38	+0.10	+0.07
506	28.94 -0.47	4.01	2.58	0.08	0.12	566	3.02 -0.56	3.65	0.33	0.10	0.07
507	28.47 -0.47	4.01	2.56	0.08	0.12	567	3.58 -0.56	3.64	0.28	0.10	0.07
508	28.00 -0.48	4.01	2.54	0.08	0.12	568	4.14 -0.56	3.63	0.22	0.10	0.07
509	27.52 -0.48	4.02	2.52	0.08	0.12	569	4.70 -0.56	3.62	0.17	0.10	0.06
510	+27.04 -0.48	+4.02	+2.50	+0.08	+0.12	570	-5.26 -0.56	+3.61	+0.12	+0.10	+0.06
511	26.56 -0.49	4.02	2.47	0.08	0.12	571	5.82 -0.56	3.60	0.07	0.10	0.06
512	26.07 -0.49	4.02	2.45	0.08	0.12	572	6.38 -0.55	3.59	+0.02	0.10	0.06
513	25.58 -0.49	4.02	2.43	0.08	0.12	573	6.93 -0.56	3.58	-0.03	0.10	0.05
514	25.09 -0.50	4.02	2.40	0.09	0.12	574	7.49 -0.55	3.57	0.08	0.10	0.05
515	+24.59 -0.50	+4.01	+2.38	+0.09	+0.12	575	-8.04 -0.56	+3.56	-0.13	+0.10	+0.05
516	24.09 -0.50	4.01	2.35	0.09	0.12	576	8.60 -0.55	3.55	0.18	0.10	0.05
517	23.59 -0.50	4.01	2.32	0.09	0.12	577	9.15 -0.55	3.54	0.23	0.10	0.04
518	23.09 -0.51	4.01	2.30	0.09	0.12	578	9.70 -0.56	3.53	0.28	0.10	0.04
519	22.58 -0.50	4.01	2.27	0.09	0.12	579	10.26 -0.55	3.52	0.33	0.10	0.04
520	+22.08 -0.51	+4.00	+2.24	+0.09	+0.12	580	-10.81 -0.55	+3.51	-0.38	+0.10	+0.04
521	21.57 -0.52	4.00	2.21	0.09	0.12	581	11.36 -0.55	3.50	0.43	0.10	0.04
522	21.05 -0.51	4.00	2.18	0.09	0.12	582	11.91 -0.54	3.49	0.48	0.10	0.03
523	20.54 -0.52	3.99	2.15	0.10	0.12	583	12.45 -0.55	3.48	0.54	0.10	0.03
524	20.02 -0.52	3.99	2.11	0.10	0.12	584	13.00 -0.54	3.48	0.59	0.10	0.03
525	+19.50 -0.52	+3.98	+2.08	+0.10	+0.12	585	-13.54 -0.54	+3.47	-0.64	+0.10	+0.03
526	18.98 -0.53	3.98	2.05	0.10	0.12	586	14.08 -0.54	3.46	0.69	0.10	0.02
527	18.45 -0.52	3.97	2.01	0.10	0.12	587	14.62 -0.54	3.45	0.74	0.10	0.02
528	17.93 -0.53	3.97	1.98	0.10	0.12	588	15.16 -0.54	3.44	0.79	0.10	0.02
529	17.40 -0.53	3.96	1.94	0.10	0.12	589	15.70 -0.53	3.43	0.84	0.10	0.02
530	+16.87 -0.54	+3.96	+1.91	+0.10	+0.12	590	-16.23 -0.53	+3.42	-0.88	+0.10	+0.02
531	16.33 -0.53	3.95	1.87	0.10	0.12	591	16.76 -0.54	3.41	0.93	0.10	0.01
532	15.80 -0.54	3.94	1.83	0.10	0.12	592	17.30 -0.53	3.40	0.98	0.10	0.01
533	15.26 -0.53	3.94	1.80	0.10	0.12	593	17.83 -0.52	3.39	1.03	0.10	0.01
534	14.73 -0.54	3.93	1.76	0.10	0.12	594	18.35 -0.53	3.38	1.08	0.10	+0.01
535	+14.19 -0.55	+3.92	+1.72	+0.10	+0.12	595	-18.88 -0.52	+3.37	-1.13	+0.10	0.00
536	13.64 -0.54	3.92	1.68	0.10	0.11	596	19.40 -0.52	3.37	1.18	0.10	0.00
537	13.10 -0.54	3.91	1.64	0.10	0.11	597	19.92 -0.52	3.36	1.23	0.10	0.00
538	12.56 -0.55	3.90	1.60	0.10	0.11	598	20.44 -0.52	3.35	1.28	0.10	0.00
539	12.01 -0.54	3.90	1.56	0.10	0.11	599	20.96 -0.52	3.34	1.32	0.10	-0.01
540	+11.47	+3.89	+1.52	+0.10	+0.11	600	-21.48	+3.33	-1.37	+0.10	-0.01

TABLE IX.—Arg. 4. *Action of Saturn.*

Arg.	(v. c. o)	Arg.	(v. c. o)	Arg.	(v. c. o)	Arg.	(v. c. o)	Arg.	(v. c. o)
0	+ 21. 49	60	+100. 33	120	+140. 29	180	+128. 43	240	+ 68. 97
1	22. 98 +1. 49	61	101. 37 +1. 04	121	140. 53 +0. 24	181	127. 80 -0. 63	241	67. 67 -1. 30
2	24. 47 +1. 49	62	102. 40 +1. 03	122	140. 75 +0. 22	182	127. 15 -0. 65	242	66. 36 -1. 31
3	25. 96 +1. 49	63	103. 42 +1. 02	123	140. 96 +0. 21	183	126. 49 -0. 66	243	65. 05 -1. 31
4	27. 45 +1. 48	64	104. 43 +1. 01	124	141. 16 +0. 20	184	125. 81 -0. 68	244	63. 73 -1. 32
5	+ 28. 93	65	+105. 43	125	+141. 34	185	+125. 12	245	+ 62. 40
6	30. 40 +1. 47	66	106. 42 +0. 99	126	141. 50 +0. 16	186	124. 42 -0. 70	246	61. 06 -1. 34
7	31. 88 +1. 48	67	107. 40 +0. 98	127	141. 65 +0. 15	187	123. 70 -0. 72	247	59. 72 -1. 34
8	33. 35 +1. 47	68	108. 36 +0. 96	128	141. 79 +0. 14	188	122. 97 -0. 73	248	58. 37 -1. 35
9	34. 81 +1. 46	69	109. 31 +0. 95	129	141. 91 +0. 12	189	122. 23 -0. 74	249	57. 02 -1. 35
10	+ 36. 27	70	+110. 25	130	+142. 01	190	+121. 47	250	+ 55. 66
11	37. 73 +1. 46	71	111. 18 +0. 93	131	142. 10 +0. 09	191	120. 70 -0. 77	251	54. 29 -1. 37
12	39. 18 +1. 45	72	112. 10 +0. 92	132	142. 18 +0. 08	192	119. 92 -0. 78	252	52. 91 -1. 38
13	40. 62 +1. 44	73	113. 00 +0. 90	133	142. 24 +0. 06	193	119. 13 -0. 79	253	51. 53 -1. 38
14	42. 06 +1. 44	74	113. 89 +0. 89	134	142. 28 +0. 04	194	118. 32 -0. 81	254	50. 14 -1. 39
15	+ 43. 50	75	+114. 76	135	+142. 31	195	+117. 50	255	+ 48. 75
16	44. 93 +1. 43	76	115. 63 +0. 87	136	142. 32 +0. 01	196	116. 67 -0. 83	256	47. 35 -1. 40
17	46. 35 +1. 42	77	116. 48 +0. 85	137	142. 32 +0. 00	197	115. 82 -0. 85	257	45. 94 -1. 41
18	47. 77 +1. 42	78	117. 32 +0. 84	138	142. 31 -0. 01	198	114. 96 -0. 86	258	44. 53 -1. 41
19	49. 18 +1. 41	79	118. 15 +0. 83	139	142. 28 -0. 03	199	114. 09 -0. 87	259	43. 11 -1. 42
20	+ 50. 59	80	+118. 96	140	+142. 24	200	+113. 21	260	+ 41. 69
21	51. 99 +1. 40	81	119. 76 +0. 80	141	142. 18 -0. 06	201	112. 32 -0. 89	261	40. 26 -1. 43
22	53. 38 +1. 39	82	120. 55 +0. 79	142	142. 10 -0. 08	202	111. 41 -0. 91	262	38. 83 -1. 43
23	54. 77 +1. 39	83	121. 33 +0. 78	143	142. 10 -0. 09	203	110. 49 -0. 92	263	37. 39 -1. 44
24	56. 15 +1. 38	84	122. 09 +0. 76	144	142. 01 -0. 10	204	109. 56 -0. 93	264	35. 95 -1. 44
25	+ 57. 53	85	+122. 84	145	+141. 79	205	+108. 61	265	+ 34. 51
26	58. 90 +1. 37	86	123. 58 +0. 74	146	141. 65 -0. 14	206	107. 65 -0. 96	266	33. 06 -1. 45
27	60. 26 +1. 36	87	124. 30 +0. 72	147	141. 50 -0. 15	207	106. 69 -0. 96	267	31. 61 -1. 45
28	61. 61 +1. 35	88	125. 01 +0. 71	148	141. 50 -0. 16	208	105. 72 -0. 97	268	30. 15 -1. 46
29	62. 95 +1. 34	89	125. 70 +0. 69	149	141. 34 -0. 18	209	104. 73 -0. 99	269	28. 69 -1. 46
30	+ 64. 29	90	+126. 38	150	+140. 97	210	+103. 73	270	+ 27. 23
31	65. 62 +1. 33	91	127. 05 +0. 67	151	140. 77 -0. 20	211	102. 72 -1. 01	271	25. 76 -1. 47
32	66. 94 +1. 32	92	127. 71 +0. 66	152	140. 77 -0. 22	212	101. 70 -1. 02	272	24. 29 -1. 47
33	68. 26 +1. 32	93	128. 35 +0. 64	153	140. 55 -0. 24	213	101. 70 -1. 03	273	22. 81 -1. 48
34	69. 57 +1. 31	94	128. 98 +0. 63	154	140. 31 -0. 25	214	100. 67 -1. 05	274	21. 33 -1. 48
35	+ 70. 87	95	+129. 59	155	+139. 79	215	+ 98. 56	275	+ 19. 85
36	72. 16 +1. 29	96	130. 19 +0. 60	156	139. 51 -0. 28	216	97. 49 -1. 07	276	18. 37 -1. 48
37	73. 44 +1. 28	97	130. 78 +0. 59	157	139. 21 -0. 30	217	96. 42 -1. 07	277	16. 88 -1. 49
38	74. 71 +1. 27	98	131. 35 +0. 57	158	138. 90 -0. 31	218	95. 33 -1. 09	278	15. 39 -1. 49
39	75. 98 +1. 27	99	131. 91 +0. 56	159	138. 58 -0. 32	219	94. 23 -1. 10	279	13. 90 -1. 49
40	+ 77. 24	100	+132. 45	160	+138. 24	220	+ 93. 13	280	+ 12. 41
41	78. 48 +1. 24	101	132. 98 +0. 53	161	137. 89 -0. 35	221	92. 01 -1. 12	281	10. 92 -1. 49
42	79. 72 +1. 24	102	133. 49 +0. 51	162	137. 89 -0. 37	222	90. 88 -1. 13	282	9. 42 -1. 50
43	80. 95 +1. 23	103	133. 99 +0. 50	163	137. 52 -0. 39	223	89. 74 -1. 14	283	7. 92 -1. 50
44	82. 17 +1. 22	104	134. 48 +0. 49	164	137. 13 -0. 40	224	88. 60 -1. 14	284	6. 42 -1. 50
45	+ 83. 38	105	+134. 95	165	+136. 32	225	+ 87. 44	285	+ 4. 92
46	84. 58 +1. 20	106	135. 41 +0. 46	166	135. 89 -0. 43	226	86. 27 -1. 17	286	3. 42 -1. 50
47	85. 77 +1. 19	107	135. 85 +0. 44	167	135. 45 -0. 44	227	85. 09 -1. 18	287	1. 91 -1. 51
48	86. 95 +1. 18	108	136. 28 +0. 43	168	135. 45 -0. 46	228	83. 91 -1. 18	288	0. 41 -1. 50
49	88. 12 +1. 17	109	136. 69 +0. 41	169	134. 99 -0. 47	229	82. 71 -1. 20	289	- 1. 09 -1. 50
50	+ 89. 28	110	+137. 09	170	+134. 04	230	+ 81. 50	290	- 2. 60
51	90. 43 +1. 15	111	137. 48 +0. 39	171	133. 54 -0. 50	231	80. 29 -1. 21	291	4. 10 -1. 51
52	91. 57 +1. 14	112	137. 85 +0. 37	172	133. 03 -0. 51	232	79. 07 -1. 22	292	5. 61 -1. 51
53	92. 71 +1. 14	113	138. 21 +0. 36	173	132. 51 -0. 52	233	77. 84 -1. 23	293	7. 12 -1. 50
54	93. 83 +1. 12	114	138. 55 +0. 34	174	131. 97 -0. 54	234	76. 59 -1. 25	294	8. 62 -1. 51
55	+ 94. 94	115	+138. 88	175	+131. 41	235	+ 75. 34	295	-10. 13
56	96. 04 +1. 10	116	139. 19 +0. 31	176	130. 84 -0. 57	236	74. 08 -1. 26	296	11. 63 -1. 50
57	97. 13 +1. 09	117	139. 49 +0. 30	177	130. 26 -0. 58	237	72. 82 -1. 26	297	13. 14 -1. 51
58	98. 21 +1. 08	118	139. 77 +0. 28	178	129. 66 -0. 60	238	71. 55 -1. 27	298	14. 64 -1. 50
59	99. 27 +1. 06	119	140. 04 +0. 27	179	129. 05 -0. 61	239	70. 26 -1. 29	299	16. 14 -1. 50
60	+100. 33	120	+140. 29	180	+128. 43	240	+ 68. 97	300	-17. 64

TABLE IX.—Arg. 4. *Action of Saturn.*

Arg.	(v. c. o)	Arg.	(v. c. o)	Arg.	(v. c. o)	Arg.	(v. c. o)	Arg.	(v. c. o)
	"		"		"		"		"
300	-17.64 -1.50	360	-99.31 -1.13	420	-143.52 -0.28	480	-131.44 +0.69	540	-67.61 +1.38
301	19.14 -1.50	361	100.44 -1.11	421	143.80 -0.26	481	130.75 +0.70	541	66.23 +1.38
302	20.64 -1.49	362	101.55 -1.10	422	144.06 -0.25	482	130.05 +0.72	542	64.85 +1.39
303	22.13 -1.50	363	102.65 -1.09	423	144.31 -0.23	483	129.33 +0.73	543	63.46 +1.39
304	23.63 -1.49	364	103.74 -1.08	424	144.54 -0.22	484	128.60 +0.75	544	62.07 +1.40
305	-25.12 -1.49	365	-104.82 -1.06	425	-144.76 -0.20	485	-127.85 +0.76	545	-60.67 +1.41
306	26.61 -1.49	366	105.88 -1.06	426	144.96 -0.19	486	127.09 +0.77	546	59.26 +1.41
307	28.10 -1.49	367	106.94 -1.04	427	145.15 -0.17	487	126.32 +0.79	547	57.85 +1.42
308	29.59 -1.48	368	107.98 -1.03	428	145.32 -0.15	488	125.53 +0.81	548	56.43 +1.43
309	31.07 -1.48	369	109.01 -1.02	429	145.47 -0.13	489	124.72 +0.82	549	55.00 +1.43
310	-32.55 -1.47	370	-110.03 -1.01	430	-145.60 -0.12	490	-123.90 +0.83	550	-53.57 +1.43
311	34.02 -1.47	371	111.04 -0.99	431	145.72 -0.10	491	123.07 +0.84	551	52.14 +1.44
312	35.49 -1.47	372	112.03 -0.99	432	145.82 -0.09	492	122.23 +0.86	552	50.70 +1.45
313	36.96 -1.47	373	113.02 -0.97	433	145.91 -0.07	493	121.37 +0.87	553	49.25 +1.45
314	38.43 -1.47	374	113.99 -0.96	434	145.98 -0.05	494	120.50 +0.89	554	47.80 +1.46
315	-39.90 -1.46	375	-114.95 -0.94	435	-146.03 -0.04	495	-119.61 +0.90	555	-46.34 +1.46
316	41.36 -1.45	376	115.89 -0.94	436	146.07 -0.01	496	118.71 +0.92	556	44.88 +1.47
317	42.81 -1.45	377	116.83 -0.92	437	146.08 0.00	497	117.79 +0.92	557	43.41 +1.47
318	44.26 -1.45	378	117.75 -0.90	438	146.08 +0.01	498	116.87 +0.94	558	41.94 +1.48
319	45.71 -1.44	379	118.65 -0.90	439	146.07 +0.03	499	115.93 +0.96	559	40.46 +1.48
320	-47.15 -1.44	380	-119.55 -0.88	440	-146.04 +0.05	500	-114.97 +0.96	560	-38.98 +1.49
321	48.59 -1.43	381	120.43 -0.87	441	145.99 +0.06	501	114.01 +0.98	561	37.49 +1.49
322	50.02 -1.43	382	121.30 -0.85	442	145.93 +0.08	502	113.03 +0.99	562	36.00 +1.49
323	51.45 -1.42	383	122.15 -0.84	443	145.85 +0.10	503	112.04 +1.01	563	34.51 +1.49
324	52.87 -1.42	384	122.99 -0.83	444	145.75 +0.11	504	111.03 +1.02	564	33.02 +1.49
325	-54.29 -1.41	385	-123.82 -0.82	445	-145.64 +0.13	505	-110.01 +1.03	565	-31.53 +1.50
326	55.70 -1.41	386	124.64 -0.80	446	145.51 +0.15	506	108.98 +1.04	566	30.03 +1.50
327	57.11 -1.40	387	125.44 -0.78	447	145.36 +0.16	507	107.94 +1.05	567	28.53 +1.51
328	58.51 -1.39	388	126.22 -0.77	448	145.20 +0.18	508	106.89 +1.06	568	27.02 +1.51
329	59.90 -1.39	389	126.99 -0.76	449	145.02 +0.20	509	105.83 +1.08	569	25.51 +1.51
330	-61.29 -1.38	390	-127.75 -0.74	450	-144.82 +0.21	510	-104.75 +1.09	570	-24.00 +1.51
331	62.67 -1.37	391	128.49 -0.73	451	144.61 +0.23	511	103.66 +1.10	571	22.49 +1.52
332	64.04 -1.37	392	129.22 -0.72	452	144.38 +0.25	512	102.56 +1.11	572	20.97 +1.52
333	65.41 -1.36	393	129.94 -0.70	453	144.13 +0.26	513	101.45 +1.13	573	19.46 +1.52
334	66.77 -1.36	394	130.64 -0.69	454	143.87 +0.28	514	100.32 +1.14	574	17.94 +1.52
335	-68.13 -1.35	395	-131.33 -0.67	455	-143.59 +0.29	515	-99.18 +1.14	575	-16.42 +1.52
336	69.48 -1.34	396	132.00 -0.66	456	143.30 +0.31	516	98.04 +1.16	576	14.90 +1.52
337	70.82 -1.33	397	132.66 -0.64	457	142.99 +0.33	517	96.88 +1.17	577	13.38 +1.52
338	72.15 -1.33	398	133.30 -0.62	458	142.66 +0.34	518	95.71 +1.18	578	11.86 +1.52
339	73.48 -1.32	399	133.92 -0.61	459	142.32 +0.36	519	94.53 +1.19	579	10.34 +1.52
340	-74.80 -1.31	400	-134.53 -0.60	460	-141.96 +0.37	520	-93.34 +1.19	580	-8.82 +1.53
341	76.11 -1.30	401	135.13 -0.58	461	141.59 +0.39	521	92.15 +1.21	581	7.29 +1.52
342	77.41 -1.29	402	135.71 -0.57	462	141.20 +0.41	522	90.94 +1.22	582	5.77 +1.52
343	78.70 -1.29	403	136.28 -0.55	463	140.79 +0.43	523	89.72 +1.23	583	4.25 +1.53
344	79.99 -1.28	404	136.83 -0.54	464	140.36 +0.44	524	88.49 +1.24	584	2.72 +1.52
345	-81.27 -1.27	405	-137.37 -0.52	465	-139.92 +0.46	525	-87.25 +1.25	585	-1.20 +1.52
346	82.54 -1.26	406	137.89 -0.50	466	139.46 +0.47	526	86.00 +1.26	586	+0.32 +1.52
347	83.80 -1.25	407	138.39 -0.49	467	138.99 +0.49	527	84.74 +1.26	587	1.84 +1.52
348	85.05 -1.24	408	138.88 -0.48	468	138.50 +0.50	528	83.48 +1.28	588	3.36 +1.52
349	86.29 -1.23	409	139.36 -0.46	469	138.00 +0.52	529	82.20 +1.29	589	4.88 +1.52
350	-87.52 -1.22	410	-139.82 -0.44	470	-137.48 +0.53	530	-80.91 +1.29	590	+6.40 +1.52
351	88.74 -1.21	411	140.26 -0.42	471	136.95 +0.55	531	79.62 +1.30	591	7.92 +1.52
352	89.95 -1.20	412	140.68 -0.41	472	136.40 +0.57	532	78.32 +1.31	592	9.44 +1.51
353	91.15 -1.20	413	141.09 -0.40	473	135.83 +0.58	533	77.01 +1.32	593	10.95 +1.51
354	92.35 -1.19	414	141.49 -0.38	474	135.25 +0.60	534	75.69 +1.33	594	12.46 +1.51
355	-93.54 -1.18	415	-141.87 -0.36	475	-134.65 +0.61	535	-74.36 +1.34	595	+13.97 +1.51
356	94.72 -1.16	416	142.23 -0.35	476	134.04 +0.63	536	73.02 +1.34	596	15.48 +1.51
357	95.88 -1.15	417	142.58 -0.33	477	133.41 +0.64	537	71.68 +1.35	597	16.99 +1.50
358	97.03 -1.14	418	142.91 -0.31	478	132.77 +0.66	538	70.33 +1.36	598	18.49 +1.50
359	98.17 -1.14	419	143.22 -0.30	479	132.11 +0.67	539	68.97 +1.36	599	19.99 +1.50
360	-99.31	420	-143.52	480	-131.44	540	-67.61	600	+21.49

TABLE X.—Arg. 5. *Action of Saturn.*

Arg.	(v. c. o)	Arg.	(v. c. o)	Arg.	(v. c. o)	Arg.	(v. c. o)	Arg.	(v. c. o)
0	75.52	60	0.51	120	74.09	180	120.20	240	120.89
1	74.43	61	0.82	121	75.16	181	120.61	241	120.49
2	73.33	62	2.15	122	76.22	182	121.01	242	120.07
3	72.23	63	3.48	123	77.27	183	121.39	243	119.65
4	71.12	64	4.82	124	78.31	184	121.76	244	119.21
5	70.00	65	6.15	125	79.35	185	122.12	245	118.76
6	68.87	66	7.48	126	80.38	186	122.46	246	118.29
7	67.74	67	8.80	127	81.40	187	122.79	247	117.81
8	66.60	68	10.13	128	82.40	188	123.11	248	117.32
9	65.45	69	11.46	129	83.40	189	123.41	249	116.82
10	64.29	70	12.79	130	84.39	190	123.70	250	116.31
11	63.13	71	14.11	131	85.37	191	123.97	251	115.78
12	61.96	72	15.43	132	86.34	192	124.24	252	115.24
13	60.79	73	16.75	133	87.30	193	124.49	253	114.69
14	59.61	74	18.07	134	88.25	194	124.72	254	114.12
15	58.42	75	19.38	135	89.20	195	124.94	255	113.54
16	57.22	76	20.69	136	90.14	196	125.15	256	112.95
17	56.02	77	22.00	137	91.06	197	125.35	257	112.35
18	54.81	78	23.31	138	91.97	198	125.53	258	111.73
19	53.60	79	24.62	139	92.88	199	125.70	259	111.10
20	52.38	80	25.92	140	93.77	200	125.85	260	110.47
21	51.15	81	27.22	141	94.65	201	126.00	261	109.82
22	49.92	82	28.52	142	95.52	202	126.13	262	109.15
23	48.68	83	29.81	143	96.38	203	126.24	263	108.47
24	47.44	84	31.10	144	97.24	204	126.34	264	107.78
25	46.20	85	32.38	145	98.08	205	126.43	265	107.08
26	44.95	86	33.66	146	98.91	206	126.50	266	106.37
27	43.70	87	34.94	147	99.73	207	126.56	267	105.65
28	42.44	88	36.22	148	100.54	208	126.61	268	104.92
29	41.17	89	37.49	149	101.33	209	126.64	269	104.17
30	39.90	90	38.75	150	102.11	210	126.65	270	103.42
31	38.62	91	40.01	151	102.89	211	126.66	271	102.65
32	37.34	92	41.27	152	103.66	212	126.65	272	101.87
33	36.06	93	42.52	153	104.41	213	126.63	273	101.08
34	34.78	94	43.77	154	105.15	214	126.59	274	100.28
35	33.49	95	45.01	155	105.88	215	126.54	275	99.47
36	32.20	96	46.25	156	106.60	216	126.48	276	98.65
37	30.91	97	47.48	157	107.31	217	126.40	277	97.82
38	29.61	98	48.71	158	108.00	218	126.31	278	96.97
39	28.30	99	49.93	159	108.68	219	126.20	279	96.11
40	27.00	100	51.15	160	109.35	220	126.09	280	95.24
41	25.69	101	52.36	161	110.01	221	125.96	281	94.37
42	24.38	102	53.56	162	110.66	222	125.81	282	93.49
43	23.07	103	54.76	163	111.30	223	125.65	283	92.60
44	21.75	104	55.95	164	111.93	224	125.48	284	91.69
45	20.43	105	57.14	165	112.54	225	125.30	285	90.77
46	19.11	106	58.32	166	113.13	226	125.10	286	89.84
47	17.79	107	59.49	167	113.72	227	124.88	287	88.90
48	16.47	108	60.66	168	114.29	228	124.65	288	87.96
49	15.14	109	61.82	169	114.85	229	124.41	289	87.01
50	13.82	110	62.97	170	115.40	230	124.16	290	86.05
51	12.50	111	64.11	171	115.94	231	123.89	291	85.08
52	11.17	112	65.25	172	116.46	232	123.61	292	84.09
53	9.83	113	66.38	173	116.98	233	123.32	293	83.09
54	8.50	114	67.50	174	117.48	234	123.01	294	82.09
55	7.17	115	68.62	175	117.97	235	122.69	295	81.08
56	5.84	116	69.73	176	118.44	236	122.36	296	80.06
57	4.51	117	70.83	177	118.90	237	122.01	297	79.02
58	3.18	118	71.92	178	119.35	238	121.65	298	77.98
59	1.84	119	73.01	179	119.78	239	121.28	299	76.93
60	0.51	120	74.09	180	120.20	240	120.89	300	75.88

TABLE X.—Arg. 5. *Action of Saturn.*

Arg.	(v. c. o)	Arg.	(v. c. o)	Arg.	(v. c. o)	Arg.	(v. c. o)	Arg.	(v. c. o)
	//		//		//		//		//
300	-75.88 +1.06	360	-1.71 +1.33	420	+73.71 +1.09	480	+121.17 +0.42	540	+121.86 -0.41
301	74.82 +1.07	361	-0.38 +1.33	421	74.80 +1.08	481	121.59 +0.41	541	121.45 -0.43
302	73.75 +1.08	362	+0.95 +1.33	422	75.88 +1.08	482	122.00 +0.40	542	121.02 -0.44
303	72.67 +1.09	363	2.28 +1.34	423	76.96 +1.07	483	122.40 +0.38	543	120.58 -0.45
304	71.58 +1.10	364	3.62 +1.33	424	78.03 +1.06	484	122.78 +0.37	544	120.13 -0.47
305	-70.48 +1.10	365	+4.95 +1.33	425	+79.09 +1.05	485	+123.15 +0.36	545	+119.66 -0.48
306	69.38 +1.11	366	6.28 +1.34	426	80.14 +1.04	486	123.51 +0.34	546	119.18 -0.50
307	68.27 +1.12	367	7.62 +1.33	427	81.18 +1.04	487	123.85 +0.33	547	118.68 -0.51
308	67.15 +1.13	368	8.95 +1.33	428	82.22 +1.02	488	124.18 +0.31	548	118.17 -0.52
309	66.02 +1.13	369	10.28 +1.33	429	83.24 +1.02	489	124.49 +0.30	549	117.65 -0.54
310	-64.89 +1.14	370	+11.61 +1.33	430	+84.26 +1.01	490	+124.79 +0.29	550	+117.11 -0.54
311	63.75 +1.15	371	12.94 +1.33	431	85.27 +0.99	491	125.08 +0.27	551	116.57 -0.56
312	62.60 +1.15	372	14.27 +1.32	432	86.26 +0.99	492	125.35 +0.26	552	116.01 -0.57
313	61.45 +1.16	373	15.59 +1.33	433	87.25 +0.98	493	125.61 +0.25	553	115.44 -0.59
314	60.29 +1.17	374	16.92 +1.32	434	88.23 +0.97	494	125.86 +0.23	554	114.85 -0.60
315	-59.12 +1.18	375	+18.24 +1.32	435	+89.20 +0.95	495	+126.09 +0.22	555	+114.25 -0.61
316	57.94 +1.18	376	19.56 +1.32	436	90.15 +0.95	496	126.31 +0.20	556	113.64 -0.62
317	56.76 +1.19	377	20.88 +1.31	437	91.10 +0.94	497	126.51 +0.19	557	113.02 -0.64
318	55.57 +1.19	378	22.19 +1.31	438	92.04 +0.93	498	126.70 +0.17	558	112.38 -0.65
319	54.38 +1.20	379	23.50 +1.31	439	92.97 +0.92	499	126.87 +0.16	559	111.73 -0.66
320	-53.18 +1.21	380	-24.81 +1.32	440	+93.89 +0.91	500	+127.03 +0.15	560	+111.07 -0.67
321	51.97 +1.21	381	26.13 +1.31	441	94.80 +0.89	501	127.18 +0.13	561	110.40 -0.69
322	50.76 +1.22	382	27.44 +1.30	442	95.69 +0.88	502	127.31 +0.12	562	109.71 -0.70
323	49.54 +1.22	383	28.74 +1.30	443	96.57 +0.88	503	127.43 +0.10	563	109.01 -0.71
324	48.32 +1.23	384	30.04 +1.30	444	97.45 +0.87	504	127.53 +0.09	564	108.30 -0.72
325	-47.09 +1.23	385	+31.34 +1.29	445	+98.32 +0.85	505	+127.62 +0.08	565	+107.58 -0.74
326	45.86 +1.24	386	32.63 +1.30	446	99.17 +0.85	506	127.70 +0.06	566	106.84 -0.75
327	44.62 +1.25	387	33.93 +1.29	447	100.02 +0.83	507	127.76 +0.05	567	106.09 -0.75
328	43.37 +1.25	388	35.22 +1.28	448	100.85 +0.82	508	127.81 +0.03	568	105.34 -0.76
329	42.12 +1.25	389	36.50 +1.28	449	101.67 +0.81	509	127.84 +0.02	569	104.58 -0.78
330	-40.87 +1.26	390	+37.78 +1.27	450	+102.48 +0.80	510	+127.86 0.00	570	+103.80 -0.79
331	39.61 +1.26	391	39.05 +1.28	451	103.28 +0.79	511	127.86 -0.01	571	103.01 -0.81
332	38.35 +1.27	392	40.33 +1.27	452	104.07 +0.78	512	127.85 -0.02	572	102.20 -0.82
333	37.08 +1.27	393	41.60 +1.26	453	104.85 +0.76	513	127.83 -0.04	573	101.38 -0.82
334	35.81 +1.28	394	42.86 +1.26	454	105.61 +0.75	514	127.79 -0.05	574	100.56 -0.83
335	-34.53 +1.28	395	+44.12 +1.25	455	+106.36 +0.74	515	+127.74 -0.07	575	+99.73 -0.85
336	33.25 +1.28	396	45.37 +1.25	456	107.10 +0.73	516	127.67 -0.08	576	98.88 -0.86
337	31.97 +1.29	397	46.62 +1.24	457	107.83 +0.72	517	127.59 -0.09	577	98.02 -0.87
338	30.68 +1.29	398	47.86 +1.24	458	108.55 +0.71	518	127.50 -0.11	578	97.15 -0.88
339	29.39 +1.29	399	49.10 +1.24	459	109.26 +0.69	519	127.39 -0.12	579	96.27 -0.89
340	-28.10 +1.30	400	+50.34 +1.23	460	+109.95 +0.68	520	+127.27 -0.14	580	+95.38 -0.90
341	26.80 +1.30	401	51.57 +1.22	461	110.63 +0.67	521	127.13 -0.15	581	94.48 -0.91
342	25.50 +1.30	402	52.79 +1.22	462	111.30 +0.66	522	126.98 -0.17	582	93.57 -0.92
343	24.20 +1.31	403	54.01 +1.21	463	111.96 +0.64	523	126.81 -0.18	583	92.65 -0.94
344	22.89 +1.31	404	55.22 +1.21	464	112.60 +0.63	524	126.63 -0.19	584	91.71 -0.94
345	-21.58 +1.31	405	+56.43 +1.20	465	+113.23 +0.62	525	+126.44 -0.21	585	+90.77 -0.95
346	20.27 +1.32	406	57.63 +1.19	466	113.85 +0.61	526	126.23 -0.22	586	89.82 -0.96
347	18.95 +1.32	407	58.82 +1.19	467	114.46 +0.60	527	126.01 -0.23	587	88.86 -0.97
348	17.63 +1.31	408	60.01 +1.18	468	115.06 +0.58	528	125.78 -0.25	588	87.89 -0.98
349	16.32 +1.32	409	61.19 +1.17	469	115.64 +0.56	529	125.53 -0.27	589	86.91 -0.99
350	-15.00 +1.32	410	+62.36 +1.17	470	+116.20 +0.56	530	+125.26 -0.28	590	+85.92 -1.00
351	13.68 +1.32	411	63.53 +1.16	471	116.76 +0.54	531	124.98 -0.29	591	84.92 -1.01
352	12.36 +1.33	412	64.69 +1.15	472	117.30 +0.53	532	124.69 -0.30	592	83.91 -1.02
353	11.03 +1.33	413	65.84 +1.15	473	117.83 +0.52	533	124.39 -0.32	593	82.89 -1.03
354	9.70 +1.33	414	66.99 +1.14	474	118.35 +0.50	534	124.07 -0.34	594	81.86 -1.04
355	-8.37 +1.33	415	+68.13 +1.13	475	+118.85 +0.49	535	+123.73 -0.34	595	+80.82 -1.04
356	7.04 +1.33	416	69.26 +1.12	476	119.34 +0.48	536	123.39 -0.36	596	79.78 -1.05
357	5.71 +1.33	417	70.38 +1.12	477	119.82 +0.47	537	123.03 -0.38	597	78.73 -1.06
358	4.38 +1.33	418	71.50 +1.11	478	120.29 +0.45	538	122.65 -0.39	598	77.67 -1.07
359	3.05 +1.34	419	72.61 +1.10	479	120.74 +0.43	539	122.26 -0.40	599	76.60 -1.08
360	-1.71	420	+73.71	480	+121.17	540	+121.86	600	+75.52

TABLE XI.—Arg. 6. *Action of Jupiter and Saturn.*

Arg.	(v. c. o)	(v. s. i)	(v. c. i)	Arg.	(v. c. o)	(v. s. i)	(v. c. i)	Arg.	(v. c. o)	(v. s. i)	(v. c. i)
	//	//	//		//	//	//		//	//	//
0	+0.03	+0.03	+0.02	20	0.00	-0.03	+0.02	40	-0.03	0.00	-0.04
1	0.03	0.03	0.02	21	0.00	0.03	0.01	41	0.03	0.00	0.04
2	0.03	0.02	0.03	22	-0.01	0.03	0.01	42	0.03	+0.01	0.04
3	0.03	0.02	0.03	23	0.01	0.03	+0.01	43	0.02	0.01	0.03
4	0.03	0.02	0.03	24	0.01	0.03	0.00	44	0.02	0.01	0.03
5	+0.03	+0.02	+0.03	25	-0.02	-0.03	0.00	45	-0.02	+0.01	-0.03
6	0.03	0.01	0.03	26	0.02	0.03	-0.01	46	0.02	0.02	0.03
7	0.03	0.01	0.04	27	0.02	0.03	0.01	47	0.01	0.02	0.03
8	0.03	0.01	0.04	28	0.03	0.03	0.01	48	-0.01	0.02	0.02
9	0.03	+0.01	0.04	29	0.03	0.03	0.02	49	0.00	0.02	0.02
10	+0.03	0.00	+0.04	30	-0.03	-0.03	-0.02	50	0.00	+0.03	-0.02
11	0.03	0.00	0.04	31	0.03	0.03	0.02	51	+0.01	0.03	0.01
12	0.03	0.00	0.04	32	0.03	0.02	0.03	52	0.01	0.03	0.01
13	0.02	-0.01	0.03	33	0.03	0.02	0.03	53	0.01	0.03	-0.01
14	0.02	0.01	0.03	34	0.03	0.02	0.03	54	0.01	0.03	0.00
15	+0.02	-0.01	+0.03	35	-0.03	-0.02	-0.03	55	+0.02	+0.03	0.00
16	0.02	0.02	0.03	36	0.03	0.01	0.03	56	0.02	0.03	+0.01
17	0.01	0.02	0.03	37	0.03	0.01	0.04	57	0.02	0.03	0.01
18	+0.01	0.02	0.02	38	0.03	0.01	0.04	58	0.03	0.03	0.01
19	0.00	0.02	0.02	39	0.03	-0.01	0.04	59	0.03	0.03	0.02
20	0.00	-0.03	+0.02	40	-0.03	0.00	-0.04	60	+0.03	+0.03	+0.02

TABLE XII.—Arg. 7. *Action of Jupiter and Saturn.*

Arg.	(v. c. o)	(v. s. i)	(v. c. i)	Arg.	(v. c. o)	(v. s. i)	(v. c. i)	Arg.	(v. c. o)	(v. s. i)	(v. c. i)
	//	//	//		//	//	//		//	//	//
0	-0.01	-0.03	0.00	20	-0.03	0.00	-0.03	40	+0.04	+0.03	+0.03
1	0.02	0.03	-0.01	21	0.03	0.00	0.03	41	0.04	0.03	0.03
2	0.02	0.03	0.01	22	0.02	+0.01	0.02	42	0.04	0.02	0.03
3	0.02	0.03	0.01	23	0.02	0.01	0.02	43	0.04	0.02	0.03
4	0.03	0.03	0.02	24	0.02	0.01	0.02	44	0.04	0.02	0.03
5	-0.03	-0.03	-0.02	25	-0.01	+0.02	-0.02	45	+0.04	+0.02	+0.03
6	0.03	0.03	0.02	26	-0.01	0.02	0.01	46	0.04	0.01	0.03
7	0.04	0.03	0.02	27	0.00	0.02	-0.01	47	0.04	0.01	0.03
8	0.04	0.03	0.03	28	0.00	0.03	0.00	48	0.04	+0.01	0.03
9	0.04	0.03	0.03	29	+0.01	0.03	0.00	49	0.03	0.00	0.03
10	-0.04	-0.03	-0.03	30	+0.01	+0.03	0.00	50	+0.03	0.00	+0.03
11	0.04	0.03	0.03	31	0.02	0.03	+0.01	51	0.03	0.00	0.03
12	0.04	0.02	0.03	32	0.02	0.03	0.01	52	0.02	-0.01	0.02
13	0.04	0.02	0.03	33	0.02	0.03	0.01	53	0.02	0.01	0.02
14	0.04	0.02	0.03	34	0.03	0.03	0.02	54	0.02	0.01	0.02
15	-0.04	-0.02	-0.03	35	+0.03	+0.03	+0.02	55	+0.01	-0.02	+0.02
16	0.04	0.01	0.03	36	0.03	0.03	0.02	56	+0.01	0.02	0.01
17	0.04	0.01	0.03	37	0.04	0.03	0.02	57	0.00	0.02	+0.01
18	0.04	-0.01	0.03	38	0.04	0.03	0.03	58	0.00	0.03	0.00
19	0.03	0.00	0.03	39	0.04	0.03	0.03	59	-0.01	0.03	0.00
20	-0.03	0.00	-0.03	40	+0.04	+0.03	+0.03	60	-0.01	-0.03	0.00

TABLE XIII.—Arg. 8. *Action of Jupiter and Saturn.*

Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)
0	—0.78	—0.34	—0.31	+0.01	—0.02	30	—0.60	—0.40	—0.29	—0.04	—0.01
1	0.69	0.34	0.25	0.01	0.01	31	0.51	0.40	0.24	0.05	0.01
2	0.56	0.33	0.19	0.01	—0.01	32	0.39	0.39	0.18	0.04	0.01
3	0.42	0.30	0.12	0.01	0.00	33	0.26	0.36	0.12	0.04	0.01
4	0.26	0.26	—0.04	0.01	+0.01	34	—0.10	0.32	—0.05	0.04	0.01
5	—0.09	—0.21	+0.04	+0.01	+0.01	35	+0.05	—0.26	+0.02	—0.04	—0.01
6	+0.08	0.14	0.11	0.01	0.02	36	0.21	0.19	0.09	0.03	0.01
7	0.24	—0.07	0.18	0.02	0.02	37	0.36	0.12	0.06	0.03	0.01
8	0.40	0.00	0.25	0.02	0.03	38	0.50	—0.04	0.22	0.02	0.01
9	0.53	+0.08	0.31	0.02	0.04	39	0.62	+0.04	0.27	0.02	—0.01
10	+0.64	+0.15	+0.35	+0.02	+0.04	40	—0.71	+0.12	+0.30	—0.01	0.00
11	0.72	0.22	0.37	0.02	0.04	41	0.77	0.19	0.33	0.00	—0.01
12	0.76	0.28	0.39	0.02	0.04	42	0.80	0.25	0.34	0.00	0.01
13	0.78	0.32	0.38	0.02	0.04	43	0.79	0.30	0.33	+0.01	0.01
14	0.76	0.36	0.36	0.02	0.04	44	0.75	0.34	0.30	0.01	0.01
15	+0.70	+0.37	+0.33	+0.02	+0.04	45	+0.68	+0.37	+0.27	+0.02	—0.01
16	0.62	0.37	0.28	0.02	0.04	46	0.58	0.37	0.22	0.02	0.01
17	0.51	0.36	0.22	0.01	0.04	47	0.45	0.36	0.16	0.02	0.02
18	0.38	0.32	0.15	+0.01	0.03	48	0.30	0.34	0.09	0.02	0.02
19	0.23	0.28	+0.08	0.00	0.03	49	—0.13	0.30	+0.01	0.02	0.02
20	+0.08	+0.22	0.00	0.00	+0.02	50	—0.04	+0.24	—0.06	+0.02	—0.02
21	—0.08	0.15	—0.07	0.00	0.02	51	0.21	0.18	0.13	0.02	0.03
22	0.23	+0.08	0.14	—0.01	0.01	52	0.37	0.11	0.20	0.02	0.03
23	0.37	0.00	0.21	0.02	+0.01	53	0.52	+0.04	0.26	0.02	0.03
24	0.49	—0.08	0.26	0.02	0.00	54	0.65	—0.04	0.31	0.02	0.03
25	—0.59	—0.16	—0.30	—0.03	0.00	55	—0.76	—0.11	—0.35	+0.02	—0.03
26	0.65	0.23	0.33	0.03	0.00	56	0.83	0.18	0.37	0.01	0.03
27	0.69	0.29	0.34	0.04	—0.01	57	0.87	0.24	0.38	0.01	0.03
28	0.69	0.34	0.34	0.04	0.01	58	0.88	0.29	0.37	0.01	0.03
29	0.66	0.38	0.32	0.04	0.01	59	0.84	0.32	0.35	0.01	0.02
30	—0.60	—0.40	—0.29	—0.04	—0.01	60	—0.78	—0.34	—0.31	+0.01	—0.02

TABLE XIV.—Arg. 9. *Action of Jupiter and Saturn.*

Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)
0	+0.22	0.00	—0.14	20	—0.14	—0.14	+0.07	40	—0.07	+0.14	+0.07
1	0.21	—0.02	0.14	21	0.16	0.13	0.08	41	0.05	0.15	0.05
2	0.20	0.03	0.14	22	0.17	0.11	0.09	42	0.04	0.16	0.05
3	0.19	0.05	0.13	23	0.19	0.11	0.10	43	—0.01	0.16	0.03
4	0.18	0.06	0.13	24	0.20	0.09	0.12	44	+0.01	0.16	0.01
5	+0.17	—0.08	—0.12	25	—0.21	—0.08	+0.12	45	+0.04	+0.16	+0.01
6	0.15	0.09	0.12	26	0.21	0.06	0.13	46	0.06	0.16	—0.01
7	0.14	0.11	0.11	27	0.21	0.05	0.14	47	0.08	0.16	0.03
8	0.12	0.12	0.10	28	0.22	0.03	0.14	48	0.10	0.15	0.05
9	0.10	0.13	0.09	29	0.22	—0.01	0.14	49	0.12	0.15	0.05
10	+0.08	—0.14	—0.08	30	—0.22	0.00	+0.14	50	+0.14	+0.14	—0.07
11	0.05	0.15	0.06	31	0.21	+0.01	0.14	51	0.16	0.13	0.08
12	0.03	0.16	0.05	32	0.20	0.03	0.14	52	0.17	0.11	0.09
13	+0.01	0.16	0.03	33	0.20	0.05	0.14	53	0.19	0.11	0.10
14	—0.02	0.16	—0.02	34	0.18	0.06	0.13	54	0.20	0.09	0.12
15	—0.04	—0.16	0.00	35	—0.16	+0.08	+0.12	55	+0.21	+0.08	—0.12
16	0.06	0.16	+0.01	36	0.15	0.09	0.11	56	0.21	0.06	0.13
17	0.08	0.16	0.03	37	0.13	0.11	0.10	57	0.21	0.04	0.14
18	0.10	0.15	0.05	38	0.11	0.12	0.09	58	0.22	0.02	0.14
19	0.12	0.15	0.06	39	0.09	0.13	0.08	59	0.22	+0.01	0.14
20	—0.14	—0.14	+0.07	40	—0.07	+0.14	+0.07	60	+0.22	0.00	—0.14

TABLE XV.—Arg. 10. *Action of Jupiter and Saturn.*

Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)
0	—0.05	+0.14	—0.15	20	+0.07	—0.16	—0.10	40	—0.02	+0.03	+0.26
1	0.05	0.12	0.17	21	0.08	0.17	0.08	41	0.03	0.05	0.25
2	0.04	0.11	0.19	22	0.08	0.17	0.05	42	0.03	0.06	0.25
3	0.03	0.09	0.21	23	0.08	0.17	—0.03	43	0.04	0.08	0.24
4	0.02	0.08	0.23	24	0.08	0.17	0.00	44	0.05	0.10	0.23
5	—0.02	+0.06	—0.24	25	+0.07	—0.17	+0.03	45	—0.05	+0.11	+0.21
6	—0.01	0.04	0.25	26	0.07	0.17	0.06	46	0.05	0.13	0.19
7	0.00	0.03	0.25	27	0.07	0.16	0.08	47	0.06	0.14	0.17
8	+0.01	+0.01	0.26	28	0.06	0.15	0.10	48	0.06	0.15	0.15
9	0.01	—0.01	0.26	29	0.06	0.15	0.13	49	0.07	0.16	0.13
10	+0.02	—0.03	—0.26	30	+0.05	—0.14	+0.15	50	—0.08	+0.16	+0.10
11	0.03	0.05	0.26	31	0.05	0.12	0.17	51	0.08	0.17	0.08
12	0.04	0.06	0.25	32	0.04	0.11	0.19	52	0.08	0.17	0.05
13	0.04	0.08	0.24	33	0.03	0.09	0.21	53	0.08	0.17	+0.03
14	0.05	0.10	0.22	34	0.03	0.08	0.23	54	0.08	0.17	0.00
15	+0.05	—0.11	—0.21	35	+0.02	—0.06	+0.24	55	—0.07	+0.17	—0.03
16	0.05	0.13	0.19	36	0.01	0.04	0.25	56	0.07	0.17	0.06
17	0.06	0.14	0.17	37	+0.01	0.03	0.26	57	0.07	0.16	0.08
18	0.06	0.15	0.15	38	0.00	—0.01	0.26	58	0.06	0.15	0.10
19	0.07	0.16	0.13	39	—0.01	+0.01	0.26	59	0.06	0.15	0.13
20	+0.07	—0.16	—0.10	40	—0.02	+0.03	+0.26	60	—0.05	+0.14	—0.15

TABLE XVI.—Arg. 11. *Action of Jupiter and Saturn.*

Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)
0	0.00	+0.01	—0.03	—0.02	—0.05	30	0.00	—0.01	+0.03	+0.02	+0.05
1	0.00	0.02	0.02	0.02	0.06	31	0.00	0.02	0.02	0.02	0.06
2	0.00	0.02	—0.01	0.02	0.06	32	0.00	0.02	+0.01	0.02	0.06
3	+0.01	0.03	0.00	0.02	0.06	33	—0.01	0.03	0.00	0.02	0.06
4	0.01	0.04	+0.01	0.03	0.06	34	0.01	0.04	—0.01	0.03	0.06
5	+0.02	+0.04	+0.02	—0.03	—0.07	35	—0.02	—0.04	—0.02	+0.03	+0.07
6	0.02	0.04	0.02	0.03	0.07	36	0.02	0.04	0.02	0.03	0.07
7	0.02	0.05	0.03	0.03	0.07	37	0.02	0.05	0.03	0.03	0.07
8	0.03	0.05	0.04	0.03	0.07	38	0.03	0.05	0.04	0.03	0.07
9	0.03	0.06	0.04	0.04	0.07	39	0.03	0.06	0.04	0.04	0.07
10	+0.03	+0.06	+0.05	—0.04	—0.07	40	—0.03	—0.06	—0.05	+0.04	+0.07
11	0.04	0.06	0.06	0.04	0.06	41	0.04	0.06	0.06	0.04	0.06
12	0.04	0.06	0.06	0.04	0.06	42	0.04	0.06	0.06	0.04	0.06
13	0.04	0.06	0.07	0.03	0.06	43	0.04	0.06	0.07	0.03	0.06
14	0.04	0.06	0.07	0.03	0.05	44	0.04	0.06	0.07	0.03	0.05
15	+0.04	+0.06	+0.08	—0.03	—0.05	45	—0.04	—0.06	—0.08	+0.03	+0.05
16	0.04	0.06	0.08	0.03	0.04	46	0.04	0.06	0.08	0.03	0.04
17	0.04	0.06	0.08	0.03	0.04	47	0.04	0.06	0.08	0.03	0.04
18	0.04	0.05	0.08	0.02	0.03	48	0.04	0.05	0.08	0.02	0.03
19	0.04	0.05	0.08	0.02	0.02	49	0.04	0.05	0.08	0.02	0.02
20	+0.04	+0.05	+0.08	—0.02	—0.02	50	—0.04	—0.05	—0.08	+0.02	+0.02
21	0.04	0.04	0.08	0.02	—0.01	51	0.04	0.04	0.08	0.02	+0.01
22	0.03	0.04	0.07	0.01	0.00	52	0.03	0.04	0.07	0.01	0.00
23	0.03	0.03	0.07	0.01	+0.01	53	0.03	0.03	0.07	0.01	—0.01
24	0.03	0.03	0.07	—0.01	0.01	54	0.03	0.03	0.07	+0.01	0.01
25	+0.02	+0.02	+0.06	0.00	+0.02	55	—0.02	—0.02	—0.06	0.00	—0.02
26	0.02	0.02	0.06	0.00	0.03	56	0.02	0.02	0.06	0.00	0.03
27	0.02	+0.01	0.05	0.00	0.03	57	0.02	—0.01	0.05	0.00	0.03
28	0.01	0.00	0.04	+0.01	0.04	58	0.01	0.00	0.04	—0.01	0.04
29	+0.01	—0.01	0.04	0.01	0.04	59	—0.01	+0.01	0.04	0.01	0.04
30	0.00	—0.01	+0.03	+0.02	+0.05	60	0.00	+0.01	—0.03	—0.02	—0.05

TABLE XVII.—Arg. 12. *Action of Jupiter and Saturn.*

Arg.	(v. c. o)	Arg.	(v. c. o)	Arg.	(v. c. o)	Arg.	(v. c. o)	Arg.	(v. c. o)	Arg.	(v. c. o)
	"		"		"		"		"		"
0	-0.15	10	-0.07	20	+0.08	30	+0.15	40	+0.07	50	-0.08
1	0.15	11	0.06	21	0.09	31	0.15	41	0.06	51	0.09
2	0.15	12	0.04	22	0.10	32	0.15	42	0.04	52	0.10
3	0.14	13	0.03	23	0.11	33	0.14	43	0.03	53	0.11
4	0.14	14	-0.01	24	0.12	34	0.14	44	+0.01	54	0.12
5	-0.13	15	0.00	25	+0.13	35	+0.13	45	0.00	55	-0.13
6	0.12	16	+0.02	26	0.14	36	0.12	46	-0.02	56	0.14
7	0.11	17	0.04	27	0.14	37	0.11	47	0.04	57	0.14
8	0.10	18	0.05	28	0.15	38	0.10	48	0.05	58	0.15
9	0.08	19	0.06	29	0.15	39	0.08	49	0.06	59	0.15
10	-0.07	20	+0.08	30	+0.15	40	+0.07	50	-0.08	60	-0.15

TABLE XVIII.—Arg. 13. *Action of Jupiter and Saturn.*

Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)
	"	"	"	"	"		"	"	"	"	"
0	-0.06	+0.22	+0.15	+0.01	-0.05	30	+0.06	-0.22	-0.15	-0.01	+0.05
1	0.06	0.25	0.13	0.02	0.05	31	0.06	0.25	0.13	0.02	0.05
2	0.05	0.27	0.10	0.02	0.05	32	0.05	0.27	0.10	0.02	0.05
3	0.05	0.29	0.07	0.03	0.05	33	0.05	0.29	0.07	0.03	0.05
4	0.05	0.31	0.04	0.04	0.05	34	0.05	0.31	0.04	0.04	0.05
5	-0.04	+0.32	+0.01	+0.04	-0.04	35	+0.04	-0.32	-0.01	-0.04	+0.04
6	0.04	0.33	-0.02	0.05	0.04	36	0.04	0.33	+0.02	0.05	0.04
7	0.04	0.34	0.05	0.05	0.04	37	0.04	0.34	0.05	0.05	0.04
8	0.03	0.34	0.08	0.06	0.04	38	0.03	0.34	0.08	0.06	0.04
9	0.03	0.34	0.11	0.06	0.04	39	0.03	0.34	0.11	0.06	0.04
10	-0.02	+0.34	-0.13	+0.06	-0.03	40	+0.02	-0.34	+0.13	-0.06	+0.03
11	0.02	0.33	0.16	0.06	0.03	41	0.02	0.33	0.16	0.06	0.03
12	-0.01	0.32	0.18	0.07	0.02	42	+0.01	0.32	0.18	0.07	0.02
13	0.00	0.30	0.20	0.07	0.02	43	0.00	0.30	0.20	0.07	0.02
14	0.00	0.28	0.22	0.07	0.02	44	0.00	0.28	0.22	0.07	0.02
15	+0.01	+0.26	-0.24	+0.07	-0.01	45	-0.01	-0.26	+0.24	-0.07	+0.01
16	0.01	0.24	0.26	0.06	-0.01	46	0.01	0.24	0.26	0.06	+0.01
17	0.02	0.21	0.27	0.06	0.00	47	0.02	0.21	0.27	0.06	0.00
18	0.02	0.18	0.28	0.06	0.00	48	0.02	0.18	0.28	0.06	0.00
19	0.03	0.15	0.28	0.06	+0.01	49	0.03	0.15	0.28	0.06	-0.01
20	0.03	+0.12	-0.28	+0.05	+0.01	50	-0.03	-0.12	+0.28	-0.05	-0.01
21	0.04	0.09	0.28	0.05	0.02	51	0.04	0.09	0.28	0.05	0.02
22	0.04	0.05	0.28	0.04	0.02	52	0.04	0.05	0.28	0.04	0.02
23	0.05	+0.01	0.27	0.04	0.03	53	0.05	-0.01	0.27	0.04	0.03
24	0.05	-0.02	0.26	0.03	0.03	54	0.05	+0.02	0.26	0.03	0.03
25	+0.05	-0.06	-0.25	+0.02	+0.04	55	-0.05	+0.06	+0.25	-0.02	-0.04
26	0.05	0.09	0.24	0.02	0.04	56	0.05	0.09	0.24	0.02	0.04
27	0.06	0.13	0.22	+0.01	0.04	57	0.06	0.13	0.22	-0.01	0.04
28	0.06	0.16	0.20	0.00	0.04	58	0.06	0.16	0.20	0.00	0.04
29	0.06	0.19	0.18	0.00	0.04	59	0.06	0.19	0.18	0.00	0.04
30	+0.06	-0.22	-0.15	-0.01	+0.05	60	-0.06	+0.22	+0.15	+0.01	-0.05

TABLE XIX.—Arg. 14. *Action of Jupiter and Saturn.*

Arg.	(v. c. o)	Arg.	(v. c. o)	Arg.	(v. c. o)	Arg.	(v. c. o)	Arg.	(v. c. o)	Arg.	(v. c. o)
	"		"		"		"		"		"
0	-0.11	10	+0.05	20	+0.16	30	+0.11	40	-0.05	50	-0.16
1	0.10	11	0.06	21	0.16	31	0.10	41	0.06	51	0.16
2	0.08	12	0.08	22	0.16	32	0.08	42	0.08	52	0.16
3	0.07	13	0.09	23	0.16	33	0.07	43	0.09	53	0.16
4	0.05	14	0.10	24	0.16	34	0.05	44	0.10	54	0.16
5	-0.04	15	+0.12	25	+0.15	35	+0.04	45	-0.12	55	-0.15
6	-0.02	16	0.13	26	0.15	36	+0.02	46	0.13	56	0.15
7	0.00	17	0.14	27	0.14	37	0.00	47	0.14	57	0.14
8	+0.01	18	0.14	28	0.13	38	-0.01	48	0.14	58	0.13
9	0.03	19	0.15	29	0.12	39	0.03	49	0.15	59	0.12
10	+0.05	20	+0.16	30	+0.11	40	-0.05	50	-0.16	60	-0.11

TABLE XX.—Arg. *g*. Equation of the center.

<i>g</i>	E				<i>g</i>	E				<i>g</i>	E			
0 0	0 0	0.00	"	0 360	10 0	0 59 36.45	58.86	0 350	20 0	1 57 3.54	55.64	0 340		
10	0 59.97	59.97		50	10	1 0 35.31	58.83	50	10	57 59.18	55.58	50		
20	1 59.94	59.97		40	20	1 34.14	58.79	40	20	58 54.76	55.50	40		
30	2 59.91	59.97		30	30	2 32.93	58.75	30	30	59 50.26	55.43	30		
40	3 59.88	59.96		20	40	3 31.68	58.72	20	40	2 0 45.69	55.36	20		
50	4 59.84	59.96		10	50	4 30.40	58.68	10	50	1 41.05	55.28	10		
1 0	0 5 59.80	59.96		0 359	11 0	1 5 29.08	58.63	0 349	21 0	2 2 36.33	55.21	0 339		
10	6 59.76	59.95		50	10	6 27.71	58.60	50	10	3 31.54	55.14	50		
20	7 59.71	59.95		40	20	7 26.31	58.55	40	20	4 26.68	55.06	40		
30	8 59.66	59.94		30	30	8 24.86	58.52	30	30	5 21.74	54.98	30		
40	9 59.60	59.94		20	40	9 23.38	58.47	20	40	6 16.72	54.91	20		
50	10 59.54	59.93		10	50	10 21.85	58.43	10	50	7 11.63	54.84	10		
2 0	0 11 59.47	59.92		0 358	12 0	1 11 20.28	58.38	0 348	22 0	2 8 6.47	54.76	0 338		
10	12 59.39	59.92		50	10	12 18.66	58.34	50	10	9 1.23	54.68	50		
20	13 59.31	59.91		40	20	13 17.00	58.30	40	20	9 55.91	54.60	40		
30	14 59.22	59.90		30	30	14 15.30	58.26	30	30	10 50.51	54.53	30		
40	15 59.12	59.88		20	40	15 13.56	58.20	20	40	11 45.04	54.45	20		
50	16 59.00	59.88		10	50	16 11.76	58.16	10	50	12 39.49	54.36	10		
3 0	0 17 58.88	59.87		0 357	13 0	1 17 9.92	58.12	0 347	23 0	2 13 33.85	54.29	0 337		
10	18 58.75	59.85		50	10	18 8.04	58.06	50	10	14 28.14	54.21	50		
20	19 58.60	59.85		40	20	19 6.10	58.02	40	20	15 22.35	54.12	40		
30	20 58.45	59.83		30	30	20 4.12	57.98	30	30	16 16.47	54.05	30		
40	21 58.28	59.82		20	40	21 2.10	57.92	20	40	17 10.52	53.96	20		
50	22 58.10	59.80		10	50	22 0.02	57.87	10	50	18 4.48	53.88	10		
4 0	0 23 57.90	59.79		0 356	14 0	1 22 57.89	57.82	0 346	24 0	2 18 58.36	53.80	0 336		
10	24 57.69	59.77		50	10	23 55.71	57.78	50	10	19 52.16	53.71	50		
20	25 57.46	59.76		40	20	24 53.49	57.72	40	20	20 45.87	53.63	40		
30	26 57.22	59.74		30	30	25 51.21	57.67	30	30	21 39.50	53.55	30		
40	27 56.96	59.72		20	40	26 48.88	57.61	20	40	22 33.05	53.46	20		
50	28 56.68	59.71		10	50	27 46.49	57.57	10	50	23 26.51	53.37	10		
5 0	0 29 56.39	59.69		0 355	15 0	1 28 44.06	57.51	0 345	25 0	2 24 19.88	53.29	0 335		
10	30 56.08	59.67		50	10	29 41.57	57.45	50	10	25 13.17	53.20	50		
20	31 55.75	59.65		40	20	30 39.02	57.40	40	20	26 6.37	53.12	40		
30	32 55.40	59.63		30	30	31 36.42	57.35	30	30	26 59.49	53.02	30		
40	33 55.03	59.61		20	40	32 33.77	57.29	20	40	27 52.51	52.94	20		
50	34 54.64	59.59		10	50	33 31.06	57.23	10	50	28 45.45	52.85	10		
6 0	0 35 54.23	59.57		0 354	16 0	1 34 28.29	57.18	0 344	26 0	2 29 38.30	52.76	0 334		
10	36 53.80	59.54		50	10	35 25.47	57.12	50	10	30 31.06	52.68	50		
20	37 53.34	59.52		40	20	36 22.59	57.06	40	20	31 23.74	52.58	40		
30	38 52.86	59.50		30	30	37 19.65	57.01	30	30	32 16.32	52.49	30		
40	39 52.36	59.48		20	40	38 16.66	56.94	20	40	33 8.81	52.40	20		
50	40 51.84	59.44		10	50	39 13.60	56.88	10	50	34 1.21	52.31	10		
7 0	0 41 51.28	59.43		0 353	17 0	1 40 10.48	56.83	0 343	27 0	2 34 53.52	52.22	0 333		
10	42 50.71	59.40		50	10	41 7.31	56.76	50	10	35 45.74	52.12	50		
20	43 50.11	59.37		40	20	42 4.07	56.70	40	20	36 37.86	52.03	40		
30	44 49.48	59.34		30	30	43 0.77	56.64	30	30	37 29.89	51.94	30		
40	45 48.82	59.32		20	40	43 57.41	56.58	20	40	38 21.83	51.85	20		
50	46 48.14	59.29		10	50	44 53.99	56.51	10	50	39 13.68	51.75	10		
8 0	0 47 47.43	59.25		0 352	18 0	1 45 50.50	56.45	0 342	28 0	2 40 5.43	51.65	0 332		
10	48 46.68	59.23		50	10	46 46.95	56.39	50	10	40 57.08	51.56	50		
20	49 45.91	59.20		40	20	47 43.34	56.32	40	20	41 48.64	51.46	40		
30	50 45.11	59.17		30	30	48 39.66	56.25	30	30	42 40.10	51.37	30		
40	51 44.28	59.14		20	40	49 35.91	56.19	20	40	43 31.47	51.27	20		
50	52 43.42	59.10		10	50	50 32.10	56.13	10	50	44 22.74	51.17	10		
9 0	0 53 42.52	59.07		0 351	19 0	1 51 28.23	56.05	0 341	29 0	2 45 13.91	51.07	0 331		
10	54 41.59	59.04		50	10	52 24.28	55.99	50	10	46 4.98	50.98	50		
20	55 40.63	59.01		40	20	53 20.27	55.92	40	20	46 55.96	50.88	40		
30	56 39.64	58.97		30	30	54 16.19	55.85	30	30	47 46.84	50.78	30		
40	57 38.61	58.94		20	40	55 12.04	55.79	20	40	48 37.62	50.68	20		
50	58 37.55	58.90		10	50	56 7.83	55.71	10	50	49 28.30	50.58	10		
10 0	0 59 36.45			0 350	20 0	1 57 3.54		0 340	30 0	2 50 18.88		0 330		
	E	<i>g</i>			E	<i>g</i>			E	<i>g</i>				

When *g* is less than 180° the argument is on the left of the number, and E is positive.When *g* is greater than 180° the argument is on the right of the number, and E is negative.

TABLE XX.—Arg. *g*. Equation of the center.

<i>g</i>	E		<i>g</i>	E		<i>g</i>	E	
° /	° / "	/ °	° /	° / "	/ °	° /	° / "	/ °
30 °	2 50 18.88 "	0 330	40 °	3 37 33.22 "	0 320	50 °	4 17 15.35 "	0 310
10	51 9.35 50.47	50	10	38 16.85 43.63	50	10	17 50.79 35.44	50
20	51 59.73 50.38	40	20	39 0.35 43.50	40	20	18 26.08 35.29	40
30	52 50.01 50.28	30	30	39 43.73 43.38	30	30	19 1.23 35.15	30
40	53 40.18 50.17	20	40	40 26.98 43.25	20	40	19 36.23 35.00	20
50	54 30.25 50.07	10	50	41 10.11 43.13	10	50	20 11.09 34.86	10
31 °	2 55 20.22 49.97	0 329	41 °	3 41 53.11 43.00	0 319	51 °	4 20 45.80 34.71	0 309
10	56 10.08 49.86	50	10	42 35.98 42.87	50	10	21 20.36 34.56	50
20	56 59.84 49.76	40	20	43 18.72 42.74	40	20	21 54.77 34.41	40
30	57 49.49 49.65	30	30	44 1.33 42.61	30	30	22 29.04 34.27	30
40	58 39.04 49.55	20	40	44 43.81 42.48	20	40	23 3.16 34.12	20
50	59 28.49 49.45	10	50	45 26.16 42.35	10	50	23 37.13 33.97	10
32 °	3 0 17.83 49.34	0 328	42 °	3 46 8.38 42.22	0 318	52 °	4 24 10.95 33.82	0 308
10	1 7.06 49.23	50	10	46 50.47 42.09	50	10	24 44.62 33.67	50
20	1 56.18 49.12	40	20	47 32.43 41.96	40	20	25 18.14 33.52	40
30	2 45.20 49.02	30	30	48 14.26 41.83	30	30	25 51.52 33.38	30
40	3 34.11 48.91	20	40	48 55.96 41.70	20	40	26 24.75 33.23	20
50	4 22.92 48.81	10	50	49 37.52 41.56	10	50	26 57.83 33.08	10
33 °	3 5 11.62 48.70	0 327	43 °	3 50 18.95 41.43	0 317	53 °	4 27 30.76 32.93	0 307
10	6 0.20 48.58	50	10	51 0.25 41.30	50	10	28 3.53 32.77	50
20	6 48.68 48.48	40	20	51 41.42 41.17	40	20	28 36.15 32.62	40
30	7 37.05 48.37	30	30	52 22.45 41.03	30	30	29 8.62 32.47	30
40	8 25.30 48.25	20	40	53 3.35 40.90	20	40	29 40.95 32.33	20
50	9 13.45 48.15	10	50	53 44.12 40.77	10	50	30 13.12 32.17	10
34 °	3 10 1.49 48.04	0 326	44 °	3 54 24.75 40.63	0 316	54 °	4 30 45.14 32.02	0 306
10	10 49.41 47.92	50	10	55 5.25 40.50	50	10	31 17.01 31.87	50
20	11 37.22 47.81	40	20	55 45.61 40.36	40	20	31 48.73 31.72	40
30	12 24.92 47.70	30	30	56 25.84 40.23	30	30	32 20.29 31.56	30
40	13 12.51 47.59	20	40	57 5.93 40.09	20	40	32 51.71 31.42	20
50	14 9.98 47.47	10	50	57 45.88 39.95	10	50	33 22.97 31.26	10
35 °	3 14 47.34 47.36	0 325	45 °	3 58 25.70 39.82	0 315	55 °	4 33 54.07 31.10	0 305
10	15 34.59 47.25	50	10	59 5.38 39.68	50	10	34 25.03 30.96	50
20	16 21.72 47.13	40	20	59 44.93 39.55	40	20	34 55.83 30.80	40
30	17 18.73 47.01	30	30	4 0 24.34 39.41	30	30	35 26.48 30.65	30
40	18 5.63 46.90	20	40	1 3.61 39.27	20	40	35 56.98 30.50	20
50	18 42.42 46.79	10	50	1 42.74 39.13	10	50	36 27.32 30.34	10
36 °	3 19 29.09 46.67	0 324	46 °	4 2 21.74 39.00	0 314	56 °	4 36 57.50 30.18	0 304
10	20 15.64 46.55	50	10	3 0.60 38.86	50	10	37 27.53 30.03	50
20	21 2.07 46.43	40	20	3 39.31 38.71	40	20	37 57.41 29.88	40
30	21 48.39 46.32	30	30	4 17.89 38.58	30	30	38 27.14 29.73	30
40	22 34.59 46.20	20	40	4 56.33 38.44	20	40	38 56.71 29.57	20
50	23 20.67 46.08	10	50	5 34.63 38.30	10	50	39 26.12 29.41	10
37 °	3 24 6.63 45.96	0 323	47 °	4 6 12.79 38.16	0 313	57 °	4 39 55.38 29.26	0 303
10	24 52.47 45.84	50	10	6 50.81 38.02	50	10	40 24.48 29.10	50
20	25 38.20 45.73	40	20	7 28.68 37.87	40	20	40 53.43 28.95	40
30	26 23.81 45.61	30	30	8 6.42 37.74	30	30	41 22.22 28.79	30
40	27 9.29 45.48	20	40	8 44.01 37.59	20	40	41 50.85 28.63	20
50	27 54.65 45.36	10	50	9 21.47 37.46	10	50	42 19.33 28.48	10
38 °	3 28 39.90 45.25	0 322	48 °	4 9 58.78 37.31	0 312	58 °	4 42 47.65 28.32	0 302
10	29 25.02 45.12	50	10	10 35.95 37.17	50	10	43 15.82 28.17	50
20	30 10.02 45.00	40	20	11 12.97 37.02	40	20	43 43.83 28.01	40
30	30 54.89 44.87	30	30	11 49.86 36.89	30	30	44 11.68 27.85	30
40	31 39.65 44.76	20	40	12 26.60 36.74	20	40	44 39.37 27.69	20
50	32 24.28 44.63	10	50	13 3.20 36.60	10	50	45 6.91 27.54	10
39 °	3 33 8.79 44.51	0 321	49 °	4 13 39.65 36.45	0 311	59 °	4 45 34.29 27.38	0 301
10	33 53.17 44.38	50	10	14 15.96 36.31	50	10	46 1.51 27.22	50
20	34 37.43 44.26	40	20	14 52.13 36.17	40	20	46 28.58 27.07	40
30	35 21.56 44.13	30	30	15 28.15 36.02	30	30	46 55.48 26.90	30
40	36 5.58 44.02	20	40	16 4.03 35.88	20	40	47 22.23 26.75	20
50	36 49.47 43.89	10	50	16 39.76 35.73	10	50	47 48.82 26.59	10
40 °	3 37 33.22 43.75	0 320	50 °	4 17 15.35 35.59	0 310	60 °	4 48 15.25 26.43	0 300
	E	<i>g</i>		E	<i>g</i>		E	<i>g</i>

When *g* is less than 180° the argument is on the left of the number, and E is positive.When *g* is greater than 180° the argument is on the right of the number, and E is negative.

TABLE XX.—Arg. *g*. Equation of the center.

<i>g</i>	E		<i>g</i>	E		<i>g</i>	E	
° /	° / "	/ °	° /	° / "	/ °	° /	° / "	/ °
60 °	4 48 15.25 "	0 300	70 °	5 9 45.54 "	0 290	80 °	5 21 21.28 "	0 280
10	48 41.52 26.27	50	10	10 2.05 16.51	50	10	21 27.79 6.51	50
20	49 7.64 26.12	40	20	10 18.39 16.34	40	20	21 34.13 6.34	40
30	49 33.59 25.95	30	30	10 34.56 16.17	30	30	21 40.31 6.18	30
40	49 59.39 25.80	20	40	10 50.57 16.01	20	40	21 46.32 6.01	20
50	50 25.02 25.63	10	50	11 6.42 15.85	10	50	21 52.16 5.84	10
	25.48			15.67			5.67	
61 °	4 50 50.50 "	0 299	71 °	5 11 22.09 "	0 289	81 °	5 21 57.83 "	0 279
10	51 15.82 25.32	50	10	11 37.60 15.51	50	10	22 3.34 5.51	50
20	51 40.97 25.15	40	20	11 52.95 15.35	40	20	22 8.69 5.35	40
30	52 5.97 25.00	30	30	12 8.13 15.18	30	30	22 13.87 5.18	30
40	52 30.80 24.83	20	40	12 23.14 15.01	20	40	22 18.88 5.01	20
50	52 55.48 24.68	10	50	12 37.99 14.85	10	50	22 23.72 4.84	10
	24.51			14.68			4.68	
62 °	4 53 19.99 "	0 298	72 °	5 12 52.67 "	0 288	82 °	5 22 28.40 "	0 278
10	53 44.35 24.36	50	10	13 7.18 14.51	50	10	22 32.91 4.51	50
20	54 8.54 24.19	40	20	13 21.53 14.35	40	20	22 37.26 4.35	40
30	54 32.58 24.04	30	30	13 35.71 14.18	30	30	22 41.44 4.18	30
40	54 56.45 23.87	20	40	13 49.73 14.02	20	40	22 45.45 4.01	20
50	55 20.16 23.71	10	50	14 3.58 13.85	10	50	22 49.29 3.84	10
	23.55			13.68			3.68	
63 °	4 55 43.71 "	0 297	73 °	5 14 17.26 "	0 287	83 °	5 22 52.97 "	0 277
10	56 7.10 23.39	50	10	14 30.77 13.51	50	10	22 56.49 3.52	50
20	56 30.32 23.22	40	20	14 44.12 13.35	40	20	22 59.84 3.35	40
30	56 53.39 23.07	30	30	14 57.30 13.18	30	30	23 3.02 3.18	30
40	57 16.30 22.91	20	40	15 10.32 13.02	20	40	23 6.04 3.02	20
50	57 39.04 22.74	10	50	15 23.17 12.85	10	50	23 8.90 2.86	10
	22.57			12.68			2.68	
64 °	4 58 1.61 "	0 296	74 °	5 15 35.85 "	0 286	84 °	5 23 11.58 "	0 276
10	58 24.03 22.42	50	10	15 48.36 12.51	50	10	23 14.10 2.52	50
20	58 46.28 22.25	40	20	16 0.71 12.35	40	20	23 16.46 2.36	40
30	59 8.37 22.09	30	30	16 12.89 12.18	30	30	23 18.65 2.19	30
40	59 30.30 21.93	20	40	16 24.91 12.02	20	40	23 20.68 2.03	20
50	59 52.07 21.77	10	50	16 36.76 11.85	10	50	23 22.54 1.86	10
	21.60			11.68			1.69	
65 °	5 0 13.67 "	0 295	75 °	5 16 48.44 "	0 285	85 °	5 23 24.23 "	0 275
10	0 35.11 21.44	50	10	16 59.96 11.52	50	10	23 25.76 1.53	50
20	0 56.39 21.28	40	20	17 11.30 11.34	40	20	23 27.12 1.36	40
30	1 17.51 21.12	30	30	17 22.48 11.18	30	30	23 28.32 1.20	30
40	1 38.46 20.95	20	40	17 33.49 11.01	20	40	23 29.35 1.03	20
50	1 59.25 20.79	10	50	17 44.34 10.85	10	50	23 30.22 0.87	10
	20.62			10.69			0.71	
66 °	5 2 19.87 "	0 294	76 °	5 17 55.03 "	0 284	86 °	5 23 30.93 "	0 274
10	2 40.33 20.46	50	10	18 5.54 10.51	50	10	23 31.47 0.54	50
20	3 0.63 20.30	40	20	18 15.89 10.35	40	20	23 31.85 0.38	40
30	3 20.76 20.13	30	30	18 26.07 10.18	30	30	23 32.06 0.21	30
40	3 40.73 19.97	20	40	18 36.08 10.01	20	40	23 32.10 +0.04	20
50	4 0.53 19.80	10	50	18 45.92 9.84	10	50	23 31.98 -0.12	10
	19.64			9.68			0.28	
67 °	5 4 20.17 "	0 293	77 °	5 18 55.60 "	0 283	87 °	5 23 31.70 "	0 273
10	4 39.65 19.48	50	10	19 5.11 9.51	50	10	23 31.26 0.44	50
20	4 58.96 19.31	40	20	19 14.46 9.35	40	20	23 30.65 0.61	40
30	5 18.11 19.15	30	30	19 23.64 9.18	30	30	23 29.87 0.78	30
40	5 37.09 18.98	20	40	19 32.65 9.01	20	40	23 28.93 0.94	20
50	5 55.91 18.82	10	50	19 41.49 8.84	10	50	23 27.83 1.10	10
	18.65			8.68			1.27	
68 °	5 6 14.56 "	0 292	78 °	5 19 50.17 "	0 282	88 °	5 23 26.56 "	0 272
10	6 33.05 18.49	50	10	19 58.68 8.51	50	10	23 25.13 1.43	50
20	6 51.38 18.33	40	20	20 7.02 8.34	40	20	23 23.54 1.59	40
30	7 9.54 18.16	30	30	20 15.20 8.18	30	30	23 21.78 1.76	30
40	7 27.53 17.99	20	40	20 23.21 8.01	20	40	23 19.86 1.92	20
50	7 45.36 17.83	10	50	20 31.05 7.84	10	50	23 17.78 2.08	10
	17.67			7.68			2.25	
69 °	5 8 3.03 "	0 291	79 °	5 20 38.73 "	0 281	89 °	5 23 15.53 "	0 271
10	8 20.53 17.50	50	10	20 46.24 7.51	50	10	23 13.12 2.41	50
20	8 37.86 17.33	40	20	20 53.58 7.34	40	20	23 10.55 2.57	40
30	8 55.03 17.17	30	30	21 0.75 7.17	30	30	23 7.82 2.73	30
40	9 12.03 17.00	20	40	21 7.76 7.01	20	40	23 4.92 2.90	20
50	9 28.87 16.84	10	50	21 14.61 6.85	10	50	23 1.86 3.06	10
	16.67			6.67			3.23	
70 °	5 9 45.54 "	0 290	80 °	5 21 21.28 "	0 280	90 °	5 22 58.63 "	0 270
	E	<i>g</i>		E	<i>g</i>		E	<i>g</i>

When *g* is less than 180° the argument is on the left of the number, and E is positive.

When *g* is greater than 180° the argument is on the right of the number, and E is negative.

TABLE XX.—Arg. *g*. Equation of the center.

<i>g</i>	E		<i>g</i>	E		<i>g</i>	E				
90 0	5 22 58.63	3.38	0 270	100 0	5 14 52.66	12.88	0 260	110 0	4 57 34.69	21.74	0 250
10	22 55.25	3.55	50	10	14 39.78	13.04	50	10	57 12.95	21.88	50
20	22 51.70	3.71	40	20	14 26.74	13.19	40	20	56 51.07	22.02	40
30	22 47.99	3.87	30	30	14 13.55	13.35	30	30	56 29.05	22.16	30
40	22 44.12	4.04	20	40	14 0.20	13.49	20	40	56 6.89	22.30	20
50	22 40.08	4.19	10	50	13 46.71	13.65	10	50	55 44.59	22.43	10
91 0	5 22 35.89	4.36	0 269	101 0	5 13 33.06	13.80	0 259	111 0	4 55 22.16	22.58	0 249
10	22 31.53	4.52	50	10	13 19.26	13.95	50	10	54 59.58	22.72	50
20	22 27.01	4.68	40	20	13 5.31	14.11	40	20	54 36.86	22.86	40
30	22 22.33	4.84	30	30	12 51.20	14.26	30	30	54 14.00	23.00	30
40	22 17.49	5.01	20	40	12 36.94	14.41	20	40	53 51.00	23.13	20
50	22 12.48	5.16	10	50	12 22.53	14.56	10	50	53 27.87	23.25	10
92 0	5 22 7.32	5.32	0 268	102 0	5 12 7.97	14.72	0 258	112 0	4 53 4.59	23.41	0 248
10	22 2.00	5.49	50	10	11 53.25	14.86	50	10	52 41.18	23.55	50
20	21 56.51	5.65	40	20	11 38.39	15.01	40	20	52 17.63	23.69	40
30	21 50.86	5.81	30	30	11 23.38	15.17	30	30	51 53.94	23.82	30
40	21 45.05	5.97	20	40	11 8.21	15.32	20	40	51 30.12	23.96	20
50	21 39.08	6.12	10	50	10 52.89	15.47	10	50	51 6.16	24.10	10
93 0	5 21 32.96	6.29	0 267	103 0	5 10 37.42	15.61	0 257	113 0	4 50 42.06	24.24	0 247
10	21 26.67	6.45	50	10	10 21.81	15.77	50	10	50 17.82	24.37	50
20	21 20.22	6.61	40	20	10 6.04	15.92	40	20	49 53.45	24.51	40
30	21 13.61	6.77	30	30	9 50.12	16.07	30	30	49 28.94	24.65	30
40	21 6.84	6.93	20	40	9 34.05	16.22	20	40	49 4.29	24.78	20
50	20 59.91	7.09	10	50	9 17.83	16.36	10	50	48 39.51	24.91	10
94 0	5 20 52.82	7.24	0 266	104 0	5 9 1.47	16.51	0 256	114 0	4 48 14.60	25.05	0 246
10	20 45.58	7.41	50	10	8 44.96	16.67	50	10	47 49.55	25.19	50
20	20 38.17	7.57	40	20	8 28.29	16.81	40	20	47 24.36	25.32	40
30	20 30.60	7.72	30	30	8 11.48	16.96	30	30	46 59.04	25.46	30
40	20 22.88	7.89	20	40	7 54.52	17.11	20	40	46 33.58	25.59	20
50	20 14.99	8.04	10	50	7 37.41	17.25	10	50	46 7.99	25.72	10
95 0	5 20 6.95	8.20	0 265	105 0	5 7 20.16	17.41	0 255	115 0	4 45 42.27	25.86	0 245
10	19 58.75	8.35	50	10	7 2.75	17.55	50	10	45 16.41	25.99	50
20	19 50.40	8.52	40	20	6 45.20	17.70	40	20	44 50.42	26.13	40
30	19 41.88	8.68	30	30	6 27.50	17.85	30	30	44 24.29	26.26	30
40	19 33.20	8.83	20	40	6 9.65	17.99	20	40	43 58.03	26.38	20
50	19 24.37	8.99	10	50	5 51.66	18.14	10	50	43 31.65	26.52	10
96 0	5 19 15.38	9.15	0 264	106 0	5 5 33.52	18.29	0 254	116 0	4 43 5.13	26.66	0 244
10	19 6.23	9.31	50	10	5 15.23	18.43	50	10	42 38.47	26.78	50
20	18 56.92	9.46	40	20	4 56.80	18.58	40	20	42 11.69	26.92	40
30	18 47.46	9.62	30	30	4 38.22	18.73	30	30	41 44.77	27.05	30
40	18 37.84	9.78	20	40	4 19.49	18.87	20	40	41 17.72	27.18	20
50	18 28.06	9.94	10	50	4 0.62	19.02	10	50	40 50.54	27.31	10
97 0	5 18 18.12	10.09	0 263	107 0	5 3 41.60	19.16	0 253	117 0	4 40 23.23	27.44	0 243
10	18 8.03	10.25	50	10	3 22.44	19.31	50	10	39 55.79	27.57	50
20	17 57.78	10.40	40	20	3 3.13	19.45	40	20	39 28.22	27.70	40
30	17 47.38	10.56	30	30	2 43.68	19.59	30	30	39 0.52	27.84	30
40	17 36.82	10.72	20	40	2 24.09	19.74	20	40	38 32.68	27.96	20
50	17 26.10	10.87	10	50	2 4.35	19.89	10	50	38 4.72	28.09	10
98 0	5 17 15.23	11.03	0 262	108 0	5 1 44.46	20.03	0 252	118 0	4 37 36.63	28.22	0 242
10	17 4.20	11.18	50	10	1 24.43	20.17	50	10	37 8.41	28.35	50
20	16 53.02	11.34	40	20	1 4.26	20.31	40	20	36 40.06	28.47	40
30	16 41.68	11.50	30	30	0 43.95	20.46	30	30	36 11.59	28.60	30
40	16 30.18	11.65	20	40	0 23.49	20.60	20	40	35 42.99	28.73	20
50	16 18.53	11.80	10	50	5 0 2.89	20.75	10	50	35 14.26	28.86	10
99 0	5 16 6.73	11.96	0 261	109 0	4 59 42.14	20.89	0 251	119 0	4 34 45.40	28.99	0 241
10	15 54.77	12.12	50	10	59 21.25	21.03	50	10	34 16.41	29.11	50
20	15 42.65	12.26	40	20	59 0.22	21.17	40	20	33 47.30	29.24	40
30	15 30.39	12.42	30	30	58 39.05	21.31	30	30	33 18.06	29.37	30
40	15 17.97	12.58	20	40	58 17.74	21.45	20	40	32 48.69	29.49	20
50	15 5.39	12.73	10	50	57 56.29	21.60	10	50	32 19.20	29.62	10
100 0	5 14 52.66		0 260	110 0	4 57 34.69		0 250	120 0	4 31 49.58		0 240
	E	<i>g</i>			E	<i>g</i>			E	<i>g</i>	

When *g* is less than 180° the argument is on the left of the number, and E is positive.When *g* is greater than 180° the argument is on the right of the number, and E is negative.

TABLE XX.—Arg. *g*. Equation of the center.

<i>g</i>	E				<i>g</i>	E				<i>g</i>	E				<i>g</i>
° /	° / "	"	/ °		° /	° / "	"	/ °		° /	° / "	"	/ °		
120 °	4 31 49.58	29.75	° 240		130 °	3 58 33.09	36.74	° 230		140 °	3 18 49.48	42.61	° 220		
10	31 19.83	29.87	50	10	57 56.35	36.85	50	10	18 6.87	42.70	50	18 6.87	42.70		
20	30 49.96	29.99	40	20	57 19.50	36.96	40	20	17 24.17	42.79	40	17 24.17	42.79		
30	30 19.97	30.12	30	30	56 42.54	37.07	30	30	16 41.38	42.87	30	16 41.38	42.87		
40	29 49.85	30.24	20	40	56 5.47	37.17	20	40	15 58.51	42.96	20	15 58.51	42.96		
50	29 19.61	30.37	10	50	55 28.30	37.28	10	50	15 15.55	43.05	10	15 15.55	43.05		
121 °	4 28 49.24	30.49	° 239		131 °	3 54 51.02	37.38	° 229		141 °	3 14 32.50	43.13	° 219		
10	28 18.75	30.62	50	10	54 13.64	37.49	50	10	13 49.37	43.22	50	13 49.37	43.22		
20	27 48.13	30.74	40	20	53 36.15	37.59	40	20	13 6.15	43.30	40	13 6.15	43.30		
30	27 17.39	30.86	30	30	52 58.56	37.70	30	30	12 22.85	43.39	30	12 22.85	43.39		
40	26 46.53	30.98	20	40	52 20.86	37.80	20	40	11 39.46	43.47	20	11 39.46	43.47		
50	26 15.55	31.10	10	50	51 43.06	37.91	10	50	10 55.99	43.56	10	10 55.99	43.56		
122 °	4 25 44.45	31.23	° 238		132 °	3 51 5.15	38.01	° 228		142 °	3 10 12.43	43.64	° 218		
10	25 13.22	31.36	50	10	50 27.14	38.11	50	10	9 28.79	43.72	50	9 28.79	43.72		
20	24 41.86	31.47	40	20	49 49.03	38.22	40	20	8 45.07	43.81	40	8 45.07	43.81		
30	24 10.39	31.59	30	30	49 10.81	38.32	30	30	8 1.26	43.89	30	8 1.26	43.89		
40	23 38.80	31.72	20	40	48 32.49	38.42	20	40	7 17.37	43.98	20	7 17.37	43.98		
50	23 7.08	31.83	10	50	47 54.07	38.52	10	50	6 33.39	44.05	10	6 33.39	44.05		
123 °	4 22 35.25	31.96	° 237		133 °	3 47 15.55	38.63	° 227		143 °	3 5 49.34	44.14	° 217		
10	22 3.29	32.07	50	10	46 36.92	38.73	50	10	5 5.20	44.21	50	5 5.20	44.21		
20	21 31.22	32.20	40	20	45 58.19	38.83	40	20	4 20.99	44.30	40	4 20.99	44.30		
30	20 59.02	32.32	30	30	45 19.36	38.94	30	30	3 36.69	44.39	30	3 36.69	44.39		
40	20 26.70	32.43	20	40	44 40.42	39.03	20	40	2 52.30	44.46	20	2 52.30	44.46		
50	19 54.27	32.55	10	50	44 1.39	39.13	10	50	2 7.84	44.53	10	2 7.84	44.53		
124 °	4 19 21.72	32.67	° 236		134 °	3 43 22.26	39.24	° 226		144 °	3 1 23.31	44.62	° 216		
10	18 49.05	32.79	50	10	42 43.02	39.33	50	10	3 0 38.69	44.71	50	3 0 38.69	44.71		
20	18 16.26	32.91	40	20	42 3.69	39.42	40	20	2 59 53.98	44.78	40	2 59 53.98	44.78		
30	17 43.35	33.03	30	30	41 24.27	39.53	30	30	59 9.20	44.85	30	59 9.20	44.85		
40	17 10.32	33.15	20	40	40 44.74	39.63	20	40	58 24.35	44.94	20	58 24.35	44.94		
50	16 37.17	33.26	10	50	40 5.11	39.73	10	50	57 39.41	45.01	10	57 39.41	45.01		
125 °	4 16 3.91	33.38	° 235		135 °	3 39 25.38	39.82	° 225		145 °	2 56 54.40	45.10	° 215		
10	15 30.53	33.49	50	10	38 45.56	39.93	50	10	56 9.30	45.17	50	56 9.30	45.17		
20	14 57.04	33.61	40	20	38 5.63	40.02	40	20	55 24.13	45.24	40	55 24.13	45.24		
30	14 23.43	33.73	30	30	37 25.61	40.11	30	30	54 38.89	45.32	30	54 38.89	45.32		
40	13 49.70	33.84	20	40	36 45.50	40.21	20	40	53 53.57	45.40	20	53 53.57	45.40		
50	13 15.86	33.96	10	50	36 5.29	40.31	10	50	53 8.17	45.48	10	53 8.17	45.48		
126 °	4 12 41.90	34.07	° 234		136 °	3 35 24.98	40.41	° 224		146 °	2 52 22.69	45.55	° 214		
10	12 7.83	34.19	50	10	34 44.57	40.50	50	10	51 37.14	45.62	50	51 37.14	45.62		
20	11 33.64	34.30	40	20	34 4.07	40.60	40	20	50 51.52	45.70	40	50 51.52	45.70		
30	10 59.34	34.42	30	30	33 23.47	40.70	30	30	50 5.82	45.78	30	50 5.82	45.78		
40	10 24.92	34.53	20	40	32 42.77	40.78	20	40	49 20.04	45.85	20	49 20.04	45.85		
50	9 50.39	34.64	10	50	32 1.99	40.88	10	50	48 34.19	45.92	10	48 34.19	45.92		
127 °	4 9 15.75	34.76	° 233		137 °	3 31 21.11	40.98	° 223		147 °	2 47 48.27	45.99	° 213		
10	8 40.99	34.87	50	10	30 40.13	41.07	50	10	47 2.28	46.07	50	47 2.28	46.07		
20	8 6.12	34.98	40	20	29 59.06	41.16	40	20	46 16.21	46.15	40	46 16.21	46.15		
30	7 31.14	35.09	30	30	29 17.90	41.26	30	30	45 30.06	46.21	30	45 30.06	46.21		
40	6 56.05	35.21	20	40	28 36.64	41.35	20	40	44 43.85	46.29	20	44 43.85	46.29		
50	6 20.84	35.32	10	50	27 55.29	41.44	10	50	43 57.56	46.35	10	43 57.56	46.35		
128 °	4 5 45.52	35.43	° 232		138 °	3 27 13.85	41.53	° 222		148 °	2 43 11.21	46.43	° 212		
10	5 10.09	35.55	50	10	26 32.32	41.62	50	10	42 24.78	46.50	50	42 24.78	46.50		
20	4 34.54	35.65	40	20	25 50.70	41.72	40	20	41 38.28	46.57	40	41 38.28	46.57		
30	3 58.89	35.76	30	30	25 8.98	41.81	30	30	40 51.71	46.64	30	40 51.71	46.64		
40	3 23.13	35.87	20	40	24 27.17	41.90	20	40	40 5.07	46.71	20	40 5.07	46.71		
50	2 47.26	35.99	10	50	23 45.27	41.98	10	50	39 18.36	46.78	10	39 18.36	46.78		
129 °	4 2 11.27	36.09	° 231		139 °	3 23 3.29	42.08	° 221		149 °	2 38 31.58	46.85	° 211		
10	1 35.18	36.20	50	10	22 21.21	42.17	50	10	37 44.73	46.92	50	37 44.73	46.92		
20	0 58.98	36.31	40	20	21 39.04	42.26	40	20	36 57.81	46.99	40	36 57.81	46.99		
30	4 0 22.67	36.42	30	30	20 56.78	42.34	30	30	36 10.82	47.05	30	36 10.82	47.05		
40	3 59 46.25	36.53	20	40	19 14.44	42.44	20	40	35 23.77	47.13	20	35 23.77	47.13		
50	59 9.72	36.63	10	50	19 32.00	42.52	10	50	34 36.64	47.19	10	34 36.64	47.19		
130 °	3 58 33.09		° 230		140 °	3 18 49.48		° 220		150 °	2 33 49.45		° 210		
	E	<i>g</i>		E	<i>g</i>		E	<i>g</i>		E	<i>g</i>		<i>g</i>		

When *g* is less than 180° the argument is on the left of the number, and E is positive.

When *g* is greater than 180° the argument is on the right of the number, and E is negative.

TABLE XX.—Arg. *g*. Equation of the Center.

<i>g</i>	E			<i>g</i>	E			<i>g</i>	E		
° /	° / "	"	/ °	° /	° / "	"	/ °	° /	° / "	"	/ °
150 °	2 33 49.45	47.25	0 210	160 °	1 44 48.42	50.61	0 200	170 °	0 53 5.04	52.64	0 190
10	33 2.20	47.32	50	10	43 57.81	50.66	50	10	52 12.40	52.66	50
20	32 14.88	47.39	40	20	43 7.15	50.70	40	20	51 19.74	52.68	40
30	31 27.49	47.46	30	30	42 16.45	50.75	30	30	50 27.06	52.71	30
40	30 40.03	47.52	20	40	41 25.70	50.79	20	40	49 34.35	52.73	20
50	29 52.51	47.59	10	50	40 34.91	50.83	10	50	48 41.62	52.75	10
151 °	2 29 4.92	47.65	0 209	161 °	1 39 44.08	50.88	0 199	171 °	0 47 48.87	52.77	0 189
10	28 17.27	47.72	50	10	38 53.20	50.92	50	10	46 56.10	52.79	50
20	27 29.55	47.78	40	20	38 2.28	50.96	40	20	46 3.31	52.80	40
30	26 41.77	47.84	30	30	37 11.32	51.01	30	30	45 10.51	52.83	30
40	25 53.93	47.91	20	40	36 20.31	51.04	20	40	44 17.68	52.85	20
50	25 6.02	47.97	10	50	35 29.27	51.09	10	50	43 24.83	52.87	10
152 °	2 24 18.05	48.03	0 208	162 °	1 34 38.18	51.13	0 198	172 °	0 42 31.96	52.88	0 188
10	23 30.02	48.10	50	10	33 47.05	51.17	50	10	41 39.08	52.90	50
20	22 41.92	48.15	40	20	32 55.88	51.20	40	20	40 46.18	52.92	40
30	21 53.77	48.22	30	30	32 4.68	51.25	30	30	39 53.26	52.94	30
40	21 5.55	48.28	20	40	31 13.43	51.29	20	40	39 0.32	52.95	20
50	20 17.27	48.35	10	50	30 22.14	51.32	10	50	38 7.37	52.97	10
153 °	2 19 28.92	48.40	0 207	163 °	1 29 30.82	51.37	0 197	173 °	0 37 14.40	52.98	0 187
10	18 40.52	48.46	50	10	28 39.45	51.40	50	10	36 21.42	53.00	50
20	17 52.06	48.52	40	20	27 48.05	51.44	40	20	35 28.42	53.02	40
30	17 3.54	48.58	30	30	26 56.61	51.48	30	30	34 35.40	53.03	30
40	16 14.96	48.64	20	40	26 5.13	51.51	20	40	33 42.37	53.05	20
50	15 26.32	48.70	10	50	25 13.62	51.55	10	50	32 49.32	53.06	10
154 °	2 14 37.62	48.76	0 206	164 °	1 24 22.07	51.59	0 196	174 °	0 31 56.26	53.07	0 186
10	13 48.86	48.81	50	10	23 30.48	51.62	50	10	31 3.19	53.08	50
20	13 0.05	48.88	40	20	22 38.86	51.65	40	20	30 10.11	53.10	40
30	12 11.17	48.93	30	30	21 47.21	51.70	30	30	29 17.01	53.11	30
40	11 22.24	48.98	20	40	20 55.51	51.73	20	40	28 23.90	53.13	20
50	10 33.26	49.05	10	50	20 3.78	51.76	10	50	27 30.77	53.13	10
155 °	2 9 44.21	49.10	0 205	165 °	1 19 12.02	51.79	0 195	175 °	0 26 37.64	53.15	0 185
10	8 55.11	49.16	50	10	18 20.23	51.83	50	10	25 44.49	53.16	50
20	8 5.95	49.21	40	20	17 28.40	51.87	40	20	24 51.33	53.16	40
30	7 16.74	49.26	30	30	16 36.53	51.89	30	30	23 58.17	53.18	30
40	6 27.48	49.32	20	40	15 44.64	51.93	20	40	23 4.99	53.19	20
50	5 38.16	49.38	10	50	14 52.71	51.96	10	50	22 11.80	53.20	10
156 °	2 4 48.78	49.43	0 204	166 °	1 14 0.75	51.99	0 194	176 °	0 21 18.60	53.21	0 184
10	3 59.35	49.48	50	10	13 8.76	52.03	50	10	20 25.39	53.21	50
20	3 9.87	49.54	40	20	12 16.73	52.05	40	20	19 32.18	53.22	40
30	2 20.33	49.59	30	30	11 24.68	52.09	30	30	18 38.96	53.24	30
40	1 30.74	49.64	20	40	10 32.59	52.11	20	40	17 45.72	53.24	20
50	2 0 41.10	49.69	10	50	9 40.48	52.15	10	50	16 52.48	53.25	10
157 °	1 59 51.41	49.74	0 203	167 °	1 8 48.33	52.17	0 193	177 °	0 15 59.23	53.25	0 183
10	59 1.67	49.80	50	10	7 56.16	52.20	50	10	15 5.98	53.26	50
20	58 11.87	49.85	40	20	7 3.96	52.24	40	20	14 12.72	53.26	40
30	57 22.02	49.90	30	30	6 11.72	52.26	30	30	13 19.46	53.27	30
40	56 32.12	49.95	20	40	5 19.46	52.29	20	40	12 26.19	53.28	20
50	55 42.17	50.00	10	50	4 27.17	52.31	10	50	11 32.91	53.28	10
158 °	1 54 52.17	50.04	0 202	168 °	1 3 34.86	52.35	0 192	178 °	0 10 39.63	53.29	0 182
10	54 2.13	50.10	50	10	2 42.51	52.37	50	10	9 46.34	53.29	50
20	53 12.03	50.15	40	20	1 50.14	52.39	40	20	8 53.05	53.29	40
30	52 21.88	50.19	30	30	0 57.75	52.43	30	30	7 59.76	53.30	30
40	51 31.69	50.25	20	40	1 0 5.32	52.45	20	40	7 6.46	53.30	20
50	50 41.44	50.29	10	50	0 59 12.87	52.47	10	50	6 13.16	53.30	10
159 °	1 49 51.15	50.33	0 201	169 °	0 58 20.40	52.50	0 191	179 °	0 5 19.86	53.31	0 181
10	49 0.82	50.39	50	10	57 27.90	52.52	50	10	4 26.55	53.31	50
20	48 10.43	50.43	40	20	56 35.38	52.55	40	20	3 33.24	53.31	40
30	47 20.00	50.48	30	30	55 42.83	52.57	30	30	2 39.93	53.31	30
40	46 29.52	50.53	20	40	54 50.26	52.60	20	40	1 46.62	53.31	20
50	45 38.99	50.57	10	50	53 57.66	52.62	10	50	0 53.31	53.31	10
160 °	1 44 48.42		0 200	170 °	0 53 5.04		0 190	180 °	0 0 0.00		0 180
	E	<i>g</i>			E	<i>g</i>			E	<i>g</i>	

When *g* is less than 180° the argument is on the left of the number, and E is positive.When *g* is greater than 180° the argument is on the right of the number, and E is negative.

TABLE XXI.—Arg. *u*. Reduction to the ecliptic.

<i>u</i>	<i>u</i>	R	<i>u</i>	<i>u</i>	R	<i>u</i>	<i>u</i>	R	<i>u</i>	<i>u</i>	R
0	0	//	0	0	//	0	0	//	0	0	//
0	180	0.00	45	225	-9.38	90	270	0.00	135	315	+9.38
1	181	-0.33	46	226	9.37	91	271	+0.33	136	316	9.37
2	182	0.65	47	227	9.36	92	272	0.65	137	317	9.36
3	183	0.98	48	228	9.33	93	273	0.98	138	318	9.33
4	184	1.30	49	229	9.29	94	274	1.30	139	319	9.29
5	185	-1.63	50	230	-9.24	95	275	+1.63	140	320	+9.24
6	186	1.95	51	231	9.17	96	276	1.95	141	321	9.17
7	187	2.27	52	232	9.10	97	277	2.27	142	322	9.10
8	188	2.58	53	233	9.02	98	278	2.58	143	323	9.02
9	189	2.90	54	234	8.92	99	279	2.90	144	324	8.92
10	190	-3.21	55	235	-8.81	100	280	+3.21	145	325	+8.81
11	191	3.51	56	236	8.70	101	281	3.51	146	326	8.70
12	192	3.81	57	237	8.57	102	282	3.81	147	327	8.57
13	193	4.11	58	238	8.43	103	283	4.11	148	328	8.43
14	194	4.40	59	239	8.28	104	284	4.40	149	329	8.28
15	195	-4.69	60	240	-8.12	105	285	+4.69	150	330	+8.12
16	196	4.97	61	241	7.95	106	286	4.97	151	331	7.95
17	197	5.24	62	242	7.77	107	287	5.24	152	332	7.77
18	198	5.51	63	243	7.59	108	288	5.51	153	333	7.59
19	199	5.77	64	244	7.39	109	289	5.77	154	334	7.39
20	200	-6.03	65	245	-7.18	110	290	+6.03	155	335	+7.18
21	201	6.27	66	246	6.97	111	291	6.27	156	336	6.97
22	202	6.51	67	247	6.75	112	292	6.51	157	337	6.75
23	203	6.75	68	248	6.51	113	293	6.75	158	338	6.51
24	204	6.97	69	249	6.27	114	294	6.97	159	339	6.27
25	205	-7.18	70	250	-6.03	115	295	+7.18	160	340	+6.03
26	206	7.39	71	251	5.77	116	296	7.39	161	341	5.77
27	207	7.59	72	252	5.51	117	297	7.59	162	342	5.51
28	208	7.77	73	253	5.24	118	298	7.77	163	343	5.24
29	209	7.95	74	254	4.97	119	299	7.95	164	344	4.97
30	210	-8.12	75	255	-4.69	120	300	+8.12	165	345	+4.69
31	211	8.28	76	256	4.40	121	301	8.28	166	346	4.40
32	212	8.43	77	257	4.11	122	302	8.43	167	347	4.11
33	213	8.57	78	258	3.81	123	303	8.57	168	348	3.81
34	214	8.70	79	259	3.51	124	304	8.70	169	349	3.51
35	215	-8.81	80	260	-3.21	125	305	+8.81	170	350	+3.21
36	216	8.92	81	261	2.90	126	306	8.92	171	351	2.90
37	217	9.02	82	262	2.58	127	307	9.02	172	352	2.58
38	218	9.10	83	263	2.27	128	308	9.10	173	353	2.27
39	219	9.17	84	264	1.95	129	309	9.17	174	354	1.95
40	220	-9.24	85	265	-1.63	130	310	+9.24	175	355	+1.63
41	221	9.29	86	266	1.30	131	311	9.29	176	356	1.30
42	222	9.33	87	267	0.98	132	312	9.33	177	357	0.98
43	223	9.36	88	268	0.65	133	313	9.36	178	358	0.65
44	224	9.37	89	269	-0.33	134	314	9.37	179	359	+0.33
45	225	-9.38	90	270	0.00	135	315	+9.38	180	360	0.00

TABLE XXII.—*Sum of secular terms and terms of long period.*

Year.	(<i>p. c. 0</i>)	(<i>p. s. 1</i>)	(<i>p. c. 1</i>)	(<i>p. s. 2</i>)	(<i>p. c. 2</i>)	(<i>p. s. 3</i>)	(<i>p. c. 3</i>)
1600	+318	+1 157	+3 539	+84	+248	+4	+18
10	308	1 144	3 427	83	240	4	18
20	297	1 130	3 314	83	232	4	17
30	287	1 114	3 201	82	224	4	16
40	277	1 096	3 087	81	216	4	16
1650	+267	+1 077	+2 972	+79	+208	+4	+15
60	256	1 056	2 857	78	199	4	14
70	246	1 033	2 741	76	191	4	14
80	235	1 009	2 625	75	183	4	13
90	225	983	2 508	73	174	4	13
1700	+214	+ 955	+2 391	+71	+166	+4	+12
10	204	926	2 274	69	158	4	11
20	193	895	2 156	66	149	3	11
30	182	861	2 037	64	141	3	10
40	172	826	1 918	61	132	3	10
1750	+161	+ 790	+1 799	+59	+124	+3	+ 9
60	151	751	1 680	56	115	3	8
70	140	710	1 560	53	106	3	8
80	130	668	1 441	50	98	3	7
90	119	623	1 321	46	89	3	6
1800	+108	+ 577	+1 200	+43	+ 81	+2	+ 6
10	97	528	1 080	39	72	2	5
20	87	478	959	35	63	2	5
30	76	425	839	32	55	2	4
40	66	371	718	28	46	2	4
1850	+ 55	+ 314	+ 597	+23	+ 38	+1	+ 3
60	45	256	477	19	29	1	2
70	34	195	356	15	21	+1	2
80	24	132	236	10	12	0	1
90	13	68	+ 116	+ 5	+ 3	0	+ 1
1900	+ 3	+ 1	— 5	0	— 5	0	0
10	— 8	— 69	125	— 5	14	0	— 1
20	18	140	244	10	22	—1	1
30	28	213	364	15	31	1	2
40	39	289	483	21	39	1	2
1950	— 49	— 366	— 602	—27	— 47	—2	— 3
60	59	446	720	32	56	2	3
70	69	529	838	38	64	2	4
80	79	613	955	44	72	3	5
90	89	699	1 072	51	80	3	5
2000	— 99	— 788	—1 188	—57	— 89	— 3	— 6

This table gives units of the seventh place of decimals.

TABLE XXIII.—Arg. 1. *Action of Neptune.*

Arg.	(p. c. o.)	(p. s. 1)	(p. c. 1)	(p. s. 2)	(p. c. 2)	(p. s. 3)	(p. c. 3)	Arg.	(p. c. o.)	(p. s. 1)	(p. c. 1)	(p. s. 2)	(p. c. 2)	(p. s. 3)	(p. c. 3)
0	-336	-88	-60	-8	+15	+2	+2	60	+69	+1	+60	+6	-5	-1	0
1	331	88	57	7	15	2	2	61	75	2	60	6	5	1	0
2	326	88	53	6	16	2	2	62	80	3	60	5	5	-1	0
3	321	88	49	5	16	2	1	63	85	4	60	5	5	0	0
4	315	88	45	4	16	2	1	64	90	5	59	5	5	0	0
5	-310	-88	-41	-3	+16	+3	+1	65	+95	+6	+59	+4	-5	0	0
6	304	88	38	2	16	3	1	66	100	6	59	4	5	0	0
7	298	87	34	-1	16	3	+1	67	104	7	58	4	5	0	0
8	292	87	30	0	16	3	0	68	109	8	58	3	5	0	0
9	286	86	27	0	16	3	0	69	113	8	58	3	5	0	0
10	-280	-85	-23	+1	+16	+3	0	70	+117	+9	+57	+3	-5	0	0
11	274	84	19	2	16	3	0	71	121	9	57	2	5	0	0
12	267	83	16	3	16	3	0	72	125	10	57	2	5	0	0
13	261	82	12	4	16	2	-1	73	128	10	56	2	5	0	0
14	254	81	8	5	15	2	1	74	131	10	56	2	5	0	0
15	-247	-80	-5	+5	+15	+2	-1	75	+134	+10	+55	+2	-5	0	0
16	241	78	-2	6	14	2	1	76	137	10	55	2	5	0	0
17	234	77	+1	7	14	2	1	77	140	11	55	2	5	0	0
18	227	75	4	8	13	2	2	78	143	11	55	1	5	0	0
19	220	74	7	8	13	2	2	79	145	11	54	1	4	0	0
20	-212	-72	+10	+9	+12	+2	-2	80	+147	+11	+54	+1	-4	0	0
21	205	70	13	9	12	2	2	81	149	11	54	1	4	0	0
22	198	68	16	10	11	2	2	82	151	11	54	1	4	0	0
23	191	67	19	10	11	1	2	83	153	11	54	+1	4	0	0
24	183	65	22	11	10	1	2	84	154	10	53	0	4	0	0
25	-176	-63	+24	+11	+10	+1	-2	85	+155	+10	+53	0	-4	0	0
26	168	61	27	12	9	1	2	86	156	10	53	0	4	0	0
27	161	59	29	12	8	+1	2	87	157	10	53	0	4	0	0
28	153	57	32	12	8	0	2	88	158	10	53	0	4	0	0
29	146	55	34	13	7	0	2	89	159	10	52	0	4	0	0
30	-138	-52	+36	+13	+7	0	-2	90	+159	+10	+52	0	-4	0	0
31	131	50	38	13	6	0	2	91	159	9	52	-1	4	0	0
32	123	48	40	13	6	0	2	92	159	9	52	1	4	0	0
33	116	46	41	13	5	0	2	93	159	9	52	1	4	0	0
34	108	44	43	13	4	0	2	94	158	9	52	1	4	0	0
35	-100	-41	+45	+13	+3	0	-2	95	+157	+9	+52	-1	-4	0	0
36	93	39	46	13	3	0	2	96	156	9	52	2	4	0	0
37	85	37	48	13	2	0	2	97	155	9	52	2	4	0	0
38	78	35	49	13	1	0	1	98	154	9	52	2	4	0	+1
39	71	33	50	13	+1	-1	1	99	152	9	52	2	4	0	1
40	-63	-31	+52	+13	0	-1	-1	100	+150	+8	+52	-3	-4	0	+1
41	56	29	53	12	0	1	1	101	148	8	52	3	4	0	1
42	49	27	54	12	-1	1	1	102	146	8	52	3	4	0	1
43	41	25	55	12	1	1	1	103	144	9	52	3	4	0	1
44	34	23	56	12	1	1	1	104	142	9	52	3	4	0	1
45	-27	-21	+56	+11	-2	-1	-1	105	+139	+9	+52	-4	-4	0	+1
46	20	19	57	11	2	1	1	106	136	9	52	4	4	0	1
47	13	17	58	11	3	1	-1	107	133	9	52	4	4	0	+1
48	-6	16	58	10	3	2	0	108	130	9	52	4	4	+1	0
49	+1	14	59	10	3	2	0	109	127	10	52	4	4	1	0
50	+8	-12	+59	+10	-3	-2	0	110	+123	+10	+52	-5	-4	+1	0
51	14	11	60	9	4	2	0	111	120	11	52	5	4	1	0
52	21	9	60	9	4	2	0	112	116	11	52	5	4	1	0
53	27	8	60	9	4	1	0	113	112	12	52	6	3	1	0
54	34	6	60	8	4	1	0	114	108	13	52	6	3	1	0
55	+40	-5	+60	+8	-5	-1	0	115	+103	+13	+52	-6	-3	+1	0
56	46	3	60	7	5	1	0	116	98	14	52	7	3	1	0
57	52	2	61	7	5	1	0	117	94	15	52	7	3	1	0
58	58	-1	61	7	5	1	0	118	89	16	51	7	3	1	0
59	64	0	61	6	5	1	0	119	84	16	51	7	2	1	0
60	+69	+1	+60	+6	-5	-1	0	120	+78	+17	+51	-8	-2	+1	0

This table gives units of the seventh place of decimals.

TABLE XXIII.—Arg. 1. *Action of Neptune.*

Arg.	(p. c. 0)	(p. s. 1)	(p. c. 1)	(p. s. 2)	(p. c. 2)	(p. s. 3)	(p. c. 3)	Arg.	(p. c. 0)	(p. s. 1)	(p. c. 1)	(p. s. 2)	(p. c. 2)	(p. s. 3)	(p. c. 3)
120	+ 78	+ 17	+ 51	— 8	— 2	+ 1	0	180	—328	+ 68	— 86	+ 14	+ 7	— 1	+ 2
121	73	18	51	8	2	1	0	181	333	66	89	14	6	1	2
122	68	19	50	8	2	1	0	182	338	65	92	15	6	— 1	2
123	62	20	50	8	1	1	0	183	343	63	95	15	4	0	3
124	56	22	49	9	1	1	0	184	347	61	98	15	4	0	3
125	+ 50	+ 23	+ 49	— 9	— 1	+ 1	0	185	—351	+ 59	—101	+ 16	+ 3	0	+ 3
126	44	24	48	9	0	1	0	186	355	57	103	16	2	0	3
127	38	26	48	9	0	1	0	187	359	55	106	16	+ 1	0	3
128	32	27	47	10	0	1	— 1	188	363	52	109	16	0	+ 1	3
129	26	28	46	10	+ 1	1	1	189	366	50	111	16	— 1	1	3
130	+ 19	+ 30	+ 45	— 10	+ 1	+ 1	— 1	190	—370	+ 47	—113	+ 16	— 2	+ 1	+ 3
131	13	31	44	10	2	1	1	191	373	45	116	16	2	1	3
132	+ 6	33	43	10	2	1	1	192	376	42	118	16	3	1	3
133	— 1	34	42	10	3	1	1	193	379	39	120	16	4	1	2
134	7	36	41	10	3	1	1	194	381	36	121	16	5	2	2
135	— 14	+ 37	+ 40	— 10	+ 3	+ 1	— 1	195	—384	+ 33	—123	+ 16	— 6	+ 2	+ 2
136	21	39	38	10	4	1	1	196	386	30	124	15	7	2	2
137	29	41	37	10	4	+ 1	1	197	388	27	125	15	8	2	2
138	36	42	36	10	5	0	2	198	390	24	126	15	8	2	1
139	43	44	34	10	6	0	2	199	391	21	127	14	9	2	1
140	— 50	+ 46	+ 32	— 10	+ 6	0	— 2	200	—392	+ 17	—128	+ 14	— 10	+ 2	+ 1
141	58	47	31	10	7	0	2	201	393	14	129	13	11	2	1
142	65	49	29	10	7	0	2	202	394	11	130	13	11	2	+ 1
143	73	50	27	10	8	— 1	2	203	394	7	130	12	12	2	0
144	80	52	25	9	8	1	2	204	394	+ 4	130	11	12	2	0
145	— 88	+ 54	+ 22	— 9	+ 9	— 1	— 2	205	—395	0	—129	+ 11	— 13	+ 2	0
146	95	55	20	8	9	1	2	206	394	— 3	129	10	13	2	0
147	103	57	18	8	10	1	2	207	394	7	128	9	14	2	0
148	110	58	16	8	10	1	2	208	393	14	127	8	14	2	— 1
149	118	60	14	7	11	1	2	209	392	14	126	8	14	2	1
150	—125	+ 61	+ 11	— 7	+ 11	— 1	— 2	210	—391	— 18	—125	+ 7	— 15	+ 2	— 1
151	133	63	9	6	11	1	2	211	390	21	124	6	15	2	1
152	141	64	6	6	12	1	2	212	388	25	122	5	15	2	1
153	148	65	+ 3	5	12	2	1	213	386	28	121	4	16	1	1
154	156	67	0	5	13	2	1	214	384	32	119	3	16	1	1
155	—163	+ 68	— 3	— 4	+ 13	— 2	— 1	215	—382	— 35	—117	+ 2	— 16	+ 1	— 1
156	171	69	6	3	13	2	1	216	379	38	114	+ 1	16	1	1
157	178	70	9	3	13	2	1	217	376	42	112	0	16	1	2
158	186	71	12	2	13	2	1	218	373	45	109	— 1	15	0	2
159	193	72	15	— 1	14	2	1	219	370	48	106	1	15	0	2
160	—201	+ 73	— 18	0	+ 14	— 2	— 1	220	—366	— 51	—103	— 2	— 14	0	— 2
161	208	74	21	0	14	2	1	221	362	54	99	3	14	0	2
162	215	74	24	+ 1	14	2	— 1	222	358	57	96	4	13	0	2
163	222	75	28	2	14	2	0	223	354	60	92	4	13	— 1	1
164	229	75	31	3	14	2	0	224	349	62	88	5	12	1	1
165	—236	+ 76	— 34	+ 3	+ 14	— 2	0	225	—345	— 65	— 84	— 6	— 12	— 1	— 1
166	243	76	38	4	14	2	0	226	340	67	80	7	11	1	1
167	250	76	41	5	14	2	0	227	335	70	76	7	10	1	1
168	256	76	45	6	13	2	+ 1	228	330	72	71	8	10	1	1
169	263	76	49	7	13	2	1	229	324	74	67	8	9	1	1
170	—269	+ 76	— 52	+ 7	+ 13	— 2	+ 1	230	—318	— 76	— 62	— 9	— 8	— 1	— 1
171	276	76	55	8	12	2	1	231	312	78	57	9	7	1	1
172	282	75	59	9	12	2	1	232	306	79	52	10	6	1	— 1
173	288	75	62	9	11	2	2	233	300	81	46	10	5	2	0
174	294	74	66	10	11	2	2	234	293	82	41	10	4	2	0
175	—300	+ 73	— 69	+ 11	+ 10	— 2	+ 2	235	—286	— 82	— 36	— 11	— 3	— 2	0
176	306	73	73	11	10	2	2	236	279	83	31	11	2	2	0
177	312	72	76	12	9	2	2	237	272	84	25	11	— 1	2	0
178	317	71	79	13	8	1	2	238	265	84	19	11	+ 1	2	+ 1
179	323	70	82	13	8	1	2	239	258	85	13	11	2	2	1
180	—328	+ 68	— 86	+ 14	+ 7	— 1	+ 2	240	—251	— 85	— 7	— 11	+ 3	— 2	+ 1

This table gives units of the seventh place of decimals.

TABLE XXIII.—Arg. I. *Action of Neptune.*

Arg.	(p. c. o.)	(p. s. 1)	(p. c. 1)	(p. s. 2)	(p. c. 2)	(p. s. 3)	(p. c. 3)	Arg.	(p. c. o.)	(p. s. 1)	(p. c. 1)	(p. s. 2)	(p. c. 2)	(p. s. 3)	(p. c. 3)
240	-251	-85	-7	-11	+3	-2	+1	300	+275	+166	+157	+26	-18	-2	-4
241	243	85	-1	10	4	2	1	301	281	170	153	25	20	2	4
242	235	85	+5	10	5	2	1	302	287	174	150	24	21	2	4
243	227	84	11	10	6	1	2	303	292	178	146	22	22	3	3
244	219	84	17	9	7	1	2	304	297	182	142	21	23	3	3
245	-210	-83	+23	-9	+8	-1	+2	305	+302	+185	+137	+20	-24	-3	-3
246	202	82	29	8	9	1	2	306	307	189	133	18	25	3	3
247	193	81	35	8	10	-1	2	307	311	192	128	17	26	3	3
248	184	79	42	7	11	0	2	308	315	195	124	16	26	4	2
249	176	77	48	6	12	0	2	309	319	197	119	14	27	4	2
250	-167	-75	+54	-6	+13	0	+2	310	+323	+199	+114	+13	-28	-4	-2
251	158	73	60	5	14	0	2	311	327	201	109	11	28	4	2
252	149	71	66	4	15	0	2	312	330	203	104	9	29	4	2
253	139	68	72	3	15	+1	2	313	333	205	98	8	29	4	1
254	130	66	78	2	16	1	2	314	336	206	93	6	29	4	1
255	-120	-63	+83	-1	+17	+1	+2	315	+338	+208	+87	+4	-29	-4	-1
256	111	60	89	0	17	1	2	316	340	209	82	3	29	4	-1
257	101	57	95	+1	18	1	2	317	342	209	76	+1	29	4	0
258	92	53	100	2	18	2	2	318	344	210	70	1	29	4	0
259	82	50	106	4	19	2	2	319	346	210	65	2	29	4	+1
260	-72	-46	+111	5	+19	+2	+2	320	+347	+210	59	4	-29	-4	+1
261	62	42	116	6	19	2	2	321	348	210	53	6	28	4	1
262	53	38	121	7	20	2	2	322	349	209	47	7	28	4	1
263	43	33	126	9	20	3	1	323	349	208	41	9	27	3	2
264	33	29	131	10	20	3	1	324	350	207	35	10	27	3	2
265	-23	-25	+136	+11	+20	+3	+1	325	+350	+206	+30	-12	-26	-3	+2
266	13	20	140	13	19	3	1	326	350	205	24	13	25	3	2
267	-4	15	144	14	19	3	+1	327	349	203	18	14	24	3	2
268	+6	10	148	15	19	3	0	328	349	201	12	16	23	2	3
269	16	-5	152	16	19	3	0	329	348	199	7	17	22	2	3
270	+26	+1	+156	+17	+18	+3	0	330	+347	+197	+1	-18	-21	-2	+3
271	36	6	159	19	18	3	0	331	345	195	-5	19	20	2	3
272	45	12	162	20	17	3	0	332	344	192	10	20	19	2	3
273	55	17	165	21	16	3	-1	333	342	189	16	21	17	1	4
274	65	23	168	22	16	3	1	334	340	186	21	22	16	1	4
275	+75	+28	+171	+24	+15	+3	-1	335	+338	+183	-26	-23	-15	-1	+4
276	84	34	173	25	14	3	1	336	335	180	31	23	13	-1	4
277	94	40	175	26	13	3	1	337	332	176	36	24	12	-1	4
278	103	46	177	27	12	3	2	338	330	173	41	25	10	0	4
279	112	52	179	27	11	3	2	339	327	169	46	25	9	0	4
280	+121	+58	+180	+28	+9	+3	-2	340	+323	+165	-50	-26	-8	0	+4
281	131	64	181	29	8	3	2	341	320	161	55	26	6	0	4
282	140	70	182	29	7	3	2	342	316	157	59	26	5	0	4
283	148	76	183	30	6	2	3	343	312	152	63	26	4	+1	4
284	157	82	183	30	5	2	3	344	308	148	67	26	2	1	4
285	+166	+88	+184	+31	+3	+2	-3	345	+304	+143	-71	-26	-1	+1	+4
286	174	93	183	31	+2	2	3	346	300	139	75	26	0	1	4
287	182	99	183	32	0	2	3	347	295	134	79	26	+2	1	4
288	190	105	182	32	-1	1	4	348	290	130	82	26	3	2	3
289	198	111	181	32	3	1	4	349	286	125	85	25	4	2	3
290	+206	+116	+180	+31	-4	+1	-4	350	+281	+121	-88	-25	+6	+2	+3
291	214	122	179	31	6	1	4	351	276	116	91	24	7	2	3
292	222	128	177	31	7	+1	4	352	271	111	93	24	8	3	3
293	229	133	176	31	9	0	4	353	266	106	96	23	9	3	2
294	236	138	174	30	10	0	4	354	260	102	98	23	10	4	2
295	+243	+143	+172	+30	-12	0	-4	355	+255	+97	-100	-22	+11	+4	+2
296	250	148	169	29	13	-1	4	356	249	92	102	21	12	4	2
297	256	153	166	28	14	1	4	357	244	88	104	21	13	4	2
298	263	157	162	27	16	2	4	358	238	83	106	20	14	3	1
299	269	162	160	27	17	2	4	359	233	78	107	19	14	3	1
300	+275	+166	+157	+26	-18	-2	-4	360	+227	+74	-109	-18	+15	+3	+1

This table gives units of the seventh place of decimals.

TABLE XXIII.—Arg. 1. *Action of Neptune.*

Arg.	(p. c. 0)	(p. s. 1)	(p. c. 1)	(p. s. 2)	(p. c. 2)	(p. s. 3)	(p. c. 3)	Arg.	(p. c. 0)	(p. s. 1)	(p. c. 1)	(p. s. 2)	(p. c. 2)	(p. s. 3)	(p. c. 3)
360	+227	+74	-109	-18	+15	+3	+1	420	+218	-102	-86	+22	+3	-3	+3
361	222	69	110	17	16	3	1	421	224	106	84	22	3	3	3
362	216	65	111	17	16	3	+1	422	229	110	82	22	2	3	3
363	211	61	112	16	17	3	0	423	235	114	79	23	+1	2	3
364	205	57	113	15	18	3	0	424	241	118	76	23	0	2	3
365	+200	+53	-113	-14	+18	+3	0	425	+246	-122	-73	+23	-1	-2	+3
366	194	49	114	13	18	3	0	426	252	126	70	23	3	2	3
367	189	45	114	12	19	3	-1	427	257	130	67	23	4	2	3
368	184	41	115	12	19	3	1	428	263	134	63	23	5	2	4
369	179	37	115	11	19	3	2	429	268	138	60	23	6	1	4
370	+174	+34	-115	-10	+19	+3	-2	430	+274	-142	-57	+23	-7	-1	+4
371	169	30	115	9	20	3	2	431	279	146	53	22	8	-1	4
372	164	27	115	8	20	3	2	432	284	150	49	22	10	0	4
373	160	24	115	7	20	2	2	433	289	153	45	21	11	0	4
374	156	21	115	6	20	2	2	434	294	157	40	21	12	+1	4
375	+151	+18	-114	-5	+20	+2	-2	435	+299	-160	-36	+20	-13	+1	+4
376	147	15	114	5	20	2	2	436	303	164	31	20	14	1	4
377	143	12	114	4	20	2	2	437	307	167	26	19	16	1	4
378	140	10	114	3	20	1	3	438	312	170	21	18	17	2	3
379	136	7	113	2	20	1	3	439	316	173	16	17	18	2	3
380	+133	+4	-113	-2	+20	+1	-3	440	+320	-176	-11	+17	-19	+2	+3
381	130	+2	113	-1	20	1	3	441	323	179	-6	16	20	2	3
382	128	-1	112	0	20	+1	3	442	327	181	0	15	21	2	3
383	126	3	112	+1	19	0	3	443	330	183	+5	14	21	3	2
384	124	5	111	1	19	0	3	444	334	186	11	13	22	3	2
385	+122	-7	-111	+2	+19	0	-3	445	+337	-188	+16	+12	-23	-1	+2
386	120	9	111	3	19	0	3	446	339	190	22	10	24	2	2
387	119	11	110	3	19	0	3	447	342	191	28	9	24	3	2
388	118	13	110	4	19	-1	3	448	344	193	34	8	25	4	1
389	117	15	109	5	19	1	3	449	346	194	39	6	25	4	1
390	+117	-17	-109	+5	+19	-1	-3	450	+348	-195	+45	+4	-26	+4	+1
391	117	19	109	6	19	1	3	451	350	195	51	3	26	4	1
392	117	21	109	7	18	1	3	452	352	196	57	+1	27	4	+1
393	117	23	109	7	18	2	3	453	353	196	63	0	27	4	0
394	118	25	108	8	18	2	3	454	354	196	68	-2	27	4	0
395	+119	-27	-108	+8	+17	-2	-3	455	+354	-196	+74	-3	-27	+4	0
396	120	30	108	9	17	2	3	456	355	195	80	5	27	4	0
397	122	32	108	10	17	2	3	457	355	195	85	6	27	4	-1
398	124	34	107	11	16	3	2	458	355	194	91	8	26	4	1
399	126	36	107	11	16	3	2	459	354	193	97	10	26	4	2
400	+128	-38	-106	+11	+16	-3	-2	460	+353	-192	+102	-11	-26	+4	-2
401	131	41	106	11	15	3	2	461	352	190	108	13	25	4	2
402	134	43	106	12	15	3	2	462	351	188	113	14	25	4	2
403	137	46	106	13	15	3	1	463	350	186	118	15	24	3	3
404	140	48	105	13	14	3	1	464	348	184	123	17	23	3	3
405	+144	-51	-105	+14	+14	-3	-1	465	+347	-182	+128	-18	-23	+3	-3
406	148	54	104	14	13	3	-1	466	345	179	132	19	22	3	3
407	152	57	104	15	13	3	0	467	342	176	137	21	21	3	3
408	156	60	103	15	12	4	0	468	340	173	141	22	20	2	3
409	161	63	102	16	12	4	+1	469	337	170	146	23	18	2	3
410	+165	-66	-101	+17	+11	-4	+1	470	+334	-167	+150	-24	-17	+2	-3
411	170	69	100	17	11	4	1	471	330	163	154	25	16	2	3
412	175	72	99	18	10	4	1	472	327	159	158	26	15	2	3
413	180	76	98	18	9	3	2	473	323	155	161	27	13	1	4
414	185	79	96	19	9	3	2	474	319	151	165	27	12	1	4
415	+190	-83	-95	+19	+8	-3	+2	475	+314	-147	+168	-28	-11	+1	-4
416	196	87	93	20	7	3	2	476	310	142	171	29	9	+1	4
417	201	91	92	20	6	3	2	477	305	138	173	29	8	0	4
418	207	94	90	21	5	3	3	478	300	133	176	30	6	0	4
419	212	98	88	21	4	3	3	479	294	128	178	30	5	-1	4
420	+218	-102	-86	+22	+3	-3	+3	480	+289	-123	+180	-30	-3	-1	-4

This table gives units of the seventh place of decimals.

TABLE XXIII.—Arg. I. *Action of Neptune.*

Arg.	(p. c. 0)	(p. s. 1)	(p. c. 1)	(p. s. 2)	(p. c. 2)	(p. s. 3)	(p. c. 3)	Arg.	(p. c. 0)	(p. s. 1)	(p. c. 1)	(p. s. 2)	(p. c. 2)	(p. s. 3)	(p. c. 3)
480	+289	-123	+180	-30	-3	-1	-4	540	-241	+77	-45	+8	-9	+2	-2
481	283	118	182	30	-2	1	4	541	248	75	51	7	10	2	2
482	277	113	184	30	0	1	4	542	256	73	56	7	11	1	2
483	271	107	185	30	+1	2	3	543	264	71	61	6	11	+1	2
484	264	102	186	30	3	2	3	544	271	69	66	5	12	0	2
485	+258	-96	+187	-29	+4	-2	-3	545	-278	+66	-71	+5	-13	0	-2
486	251	91	188	29	5	2	3	546	285	64	75	4	13	0	2
487	244	85	188	29	7	2	3	547	292	61	80	3	14	0	2
488	237	80	188	28	8	3	2	548	299	58	84	2	14	0	2
489	230	74	188	28	9	3	2	549	305	56	88	+1	15	0	2
490	+222	-68	+187	-27	+11	-3	-2	550	-311	+53	-92	0	-15	0	-2
491	214	63	187	26	12	3	2	551	317	50	96	-1	16	0	2
492	206	57	186	26	13	3	2	552	323	47	100	2	16	0	2
493	198	51	185	25	14	3	1	553	329	44	104	3	16	-1	2
494	190	45	183	24	15	3	1	554	334	40	107	3	16	1	2
495	+182	-40	+182	-23	+16	-3	-1	555	-340	+37	-110	-4	-16	-1	-2
496	173	34	180	21	17	3	-1	556	345	33	113	5	16	1	2
497	164	29	178	20	18	3	0	557	350	30	116	6	16	1	2
498	156	23	176	19	18	3	0	558	354	26	118	7	16	2	2
499	147	18	173	18	19	3	+1	559	358	22	120	8	16	2	2
500	+138	-12	+170	-17	+20	-3	+1	560	-362	+19	-122	-9	-16	-2	-2
501	128	7	167	16	20	3	1	561	366	15	124	10	15	2	2
502	119	-2	164	14	20	3	1	562	369	11	126	11	15	2	1
503	110	+4	160	13	21	2	2	563	373	8	127	12	14	3	-1
504	100	9	157	12	21	2	2	564	376	+4	129	13	14	3	0
505	+90	+14	+153	-11	+21	-2	+2	565	-379	0	-130	-13	-13	-3	0
506	81	19	149	9	21	2	2	566	382	-4	131	14	13	3	0
507	71	23	145	8	21	2	2	567	384	7	131	15	12	3	0
508	61	28	140	7	21	1	2	568	387	11	132	15	11	3	+1
509	52	32	136	5	21	1	2	569	389	15	132	16	11	3	1
510	+42	+37	+131	-4	+20	-1	+2	570	-390	-19	-132	-17	-10	-3	+1
511	32	41	126	3	20	1	2	571	392	22	131	17	9	3	1
512	22	45	121	-1	19	-1	2	572	393	26	131	18	8	3	2
513	12	48	116	0	19	0	2	573	394	29	130	18	7	3	2
514	+2	52	110	+1	18	0	2	574	395	33	130	18	6	3	2
515	-8	+56	+105	+2	+18	0	+2	575	-395	-36	-129	-18	-6	-3	+2
516	18	59	99	3	17	0	2	576	395	39	128	19	5	3	2
517	28	62	93	4	16	0	2	577	395	43	126	19	4	3	2
518	38	65	87	5	15	+1	2	578	395	46	125	19	3	2	3
519	48	68	82	6	14	1	2	579	395	49	123	19	2	2	3
520	-58	+70	+76	+6	+13	+1	+2	580	-394	-52	-122	-19	-1	-2	+3
521	68	72	70	7	12	1	2	581	393	55	120	19	0	2	3
522	78	74	64	8	11	1	2	582	392	58	118	19	+1	2	3
523	88	76	58	9	10	2	1	583	391	61	115	19	2	1	3
524	97	78	51	9	9	2	1	584	390	63	113	19	3	1	3
525	-107	+79	+45	+9	+8	+2	+1	585	-388	-66	-110	-18	+4	-1	+3
526	117	80	39	10	7	2	1	586	386	68	108	18	5	1	3
527	126	81	32	10	6	2	1	587	384	70	105	17	6	-1	3
528	136	82	26	11	4	2	1	588	381	73	102	17	7	0	3
529	145	83	20	11	3	2	1	589	378	75	99	16	8	0	3
530	-154	+83	+14	+11	+2	+2	+1	590	-375	-77	-96	-16	+9	0	+3
531	164	84	7	11	+1	2	+1	591	372	79	93	15	10	0	3
532	173	84	+1	11	0	2	0	592	369	80	90	14	10	0	3
533	182	83	-5	11	-2	2	0	593	365	82	86	14	11	+1	2
534	190	83	11	11	3	2	-1	594	362	83	83	13	12	1	2
535	-199	+82	-17	+11	-4	+2	-1	595	-358	-84	-79	-12	+13	+1	+2
536	208	82	23	10	5	2	1	596	354	85	75	11	13	1	2
537	216	81	29	10	6	2	1	597	350	86	71	11	14	1	2
538	224	79	34	9	7	2	2	598	345	86	68	10	14	2	2
539	233	78	40	9	8	2	2	599	341	87	64	9	15	2	2
540	-241	+77	-45	+8	-9	+2	-2	600	-336	-88	-60	-8	+15	+2	+2

This table gives units of the seventh place of decimals.

TABLE XXIV.—Arg. 2. *Action of Saturn.*

Arg.	($\rho. C. 0$)	($\rho. S. 1$)	Sec. Var.	($\rho. C. 1$)	Sec. Var.	($\rho. S. 2$)	Sec. Var.	($\rho. C. 2$)	Sec. Var.	($\rho. S. 3$)	($\rho. C. 3$)	($\rho. S. 4$)	($\rho. C. 4$)
0	— 34	—229	—9	—1 369	+13	+147	+1	+262	—4	+54	+36	+1	+6
1	25	244	9	1 366	13	150	1	260	4	55	35	1	6
2	17	258	8	1 362	13	153	1	259	4	55	34	2	6
3	— 9	272	8	1 358	14	155	1	258	4	55	34	2	6
4	0	287	8	1 354	14	158	1	257	4	55	33	2	6
5	+ 8	—301	—8	—1 349	+14	+161	+1	+255	—4	+55	+32	+2	+6
6	17	315	8	1 345	14	163	0	254	4	55	31	2	6
7	25	329	8	1 340	14	166	0	253	4	55	31	2	6
8	34	344	8	1 335	14	169	0	251	4	55	30	2	6
9	42	358	7	1 330	14	171	0	250	4	55	29	2	6
10	+ 51	—372	—7	—1 325	+14	+174	0	+248	—4	+56	+29	+2	+6
11	59	386	7	1 320	14	177	0	247	4	56	28	2	6
12	68	400	7	1 314	14	179	0	245	4	56	27	2	6
13	76	413	7	1 309	14	182	0	244	4	56	26	3	6
14	85	427	7	1 303	14	184	0	242	4	56	26	3	6
15	+ 93	—441	—7	—1 297	+14	+187	0	+241	—4	+56	+25	+3	+6
16	102	455	7	1 291	15	190	0	239	4	56	24	3	6
17	111	468	6	1 284	15	192	0	237	4	56	24	3	6
18	119	482	6	1 278	15	194	0	236	4	56	23	3	6
19	128	496	6	1 271	15	197	0	234	4	56	22	3	6
20	+137	—509	—6	—1 264	+15	+199	0	+232	—4	+56	+22	+3	+6
21	146	523	6	1 257	15	202	0	230	4	56	21	3	6
22	154	536	6	1 250	15	204	0	228	4	56	20	3	6
23	163	549	5	1 243	15	207	0	227	4	56	20	4	6
24	172	562	5	1 236	15	209	0	225	4	56	19	4	6
25	+181	—575	—5	—1 229	+15	+212	—1	+223	—4	+56	+18	+4	+6
26	190	588	5	1 222	15	214	1	222	4	56	18	4	6
27	198	601	5	1 214	15	217	1	220	4	56	17	4	6
28	207	614	5	1 206	15	219	1	218	4	55	16	4	6
29	216	627	4	1 197	15	221	1	216	4	55	16	4	6
30	+225	—640	—4	—1 189	+15	+224	—1	+214	—4	+55	+15	+4	+6
31	234	653	4	1 181	15	226	1	212	4	55	15	4	6
32	242	665	4	1 172	15	228	1	210	4	55	14	4	6
33	251	677	4	1 163	15	231	1	207	4	55	13	4	6
34	260	690	4	1 155	15	233	1	205	4	55	13	5	6
35	+269	—702	—4	—1 146	+16	+236	—1	+203	—4	+55	+12	+5	+6
36	278	714	3	1 137	16	238	1	201	4	55	12	5	5
37	287	726	3	1 128	16	240	1	199	4	55	11	5	5
38	296	738	3	1 119	16	242	1	196	4	55	11	5	5
39	305	750	3	1 110	16	244	1	194	4	54	10	5	5
40	+313	—762	—3	—1 100	+16	+247	—1	+192	—4	+54	+10	+5	+5
41	322	773	2	1 091	16	249	1	190	4	54	9	5	5
42	331	785	2	1 081	16	251	1	188	4	54	9	5	5
43	340	796	2	1 071	16	253	1	186	4	54	8	5	5
44	349	808	2	1 061	16	255	1	183	4	54	8	5	5
45	+358	—819	—2	—1 051	+16	+257	—1	+181	—4	+53	+ 7	+5	+5
46	366	830	2	1 041	16	260	2	178	4	53	7	6	5
47	375	841	1	1 030	16	262	2	176	4	53	6	6	5
48	384	852	1	1 020	16	264	2	173	4	53	6	6	5
49	393	863	1	1 009	16	266	2	171	4	53	5	6	5
50	+401	—874	—1	— 999	+16	+268	—2	+168	—4	+53	+ 5	+6	+5
51	410	885	1	988	16	270	2	166	4	52	4	6	4
52	419	895	1	977	16	272	2	163	4	52	4	6	4
53	427	905	—1	966	16	274	2	161	4	52	3	6	4
54	436	916	0	955	16	275	2	158	4	52	3	6	4
55	+445	—926	0	— 944	+16	+277	—2	+156	—4	+51	+ 2	+6	+4
56	454	936	0	933	16	279	2	153	4	51	2	6	4
57	462	945	0	922	16	281	2	150	4	51	2	6	4
58	471	955	0	910	16	283	2	147	4	51	1	6	4
59	479	965	0	898	16	285	2	145	4	51	+ 1	6	4
60	+488	—975	+1	— 886	+16	+287	—2	+142	—4	+51	0	+7	+4

The numbers in column Sec. Var. are to be multiplied by T and added to the others, T being the time after 1900 in units of a century.

This table gives units of the seventh place of decimals.

TABLE XXIV.—Arg. 2. *Action of Saturn.*

Arg.	(ρ . c. 0.)	(ρ . s. 1) Sec. Var.	(ρ . c. 1) Sec. Var.	(ρ . s. 2) Sec. Var.	(ρ . c. 2) Sec. Var.	(ρ . s. 3)	(ρ . c. 3)	(ρ . s. 4)	(ρ . c. 4)
60	+488	— 975 + 1	—886 +16	+287 —2	+142 —4	+51	0	+7	+4
61	496	984 1	875 16	289 2	139 4	50	0	7	3
62	505	993 1	863 16	290 2	136 4	50	0	7	3
63	513	1 002 1	851 16	292 2	134 4	50	— 1	7	3
64	522	1 011 1	839 16	294 2	131 4	50	1	7	3
65	+530	—1 020 + 1	—827 +16	+295 —2	+128 —4	+50	— 2	+7	+3
66	538	1 029 1	814 16	297 2	125 4	49	2	7	3
67	546	1 037 2	802 16	299 2	122 4	49	2	7	3
68	555	1 046 2	790 16	300 2	119 4	49	3	7	3
69	563	1 054 2	777 16	302 3	116 4	49	3	7	3
70	+571	—1 062 + 2	—765 +16	+303 —3	+113 —4	+48	— 3	+7	+3
71	579	1 070 2	752 16	305 3	110 4	48	4	7	2
72	587	1 078 2	739 16	306 3	107 4	48	4	7	2
73	595	1 086 2	727 16	308 3	104 3	48	4	7	2
74	602	1 093 3	714 15	309 3	101 3	47	5	7	2
75	+610	—1 100 + 3	—702 +15	+310 —3	+ 97 —3	+47	— 5	+7	+2
76	618	1 108 3	689 15	312 3	94 3	47	5	7	2
77	625	1 115 3	676 15	313 3	91 3	47	5	7	2
78	633	1 122 3	663 15	315 3	88 3	47	6	7	2
79	641	1 129 4	650 15	316 3	85 3	46	6	7	2
80	+648	—1 135 + 4	—637 +15	+317 —3	+ 81 —3	+46	— 7	+7	+2
81	656	1 142 4	624 15	318 3	78 3	46	7	7	1
82	663	1 148 4	610 15	320 3	75 3	46	7	7	1
83	670	1 154 4	597 15	321 3	71 3	46	8	7	1
84	677	1 161 4	584 15	322 3	68 3	45	8	7	1
85	+684	—1 167 + 5	—571 +15	+323 —3	+ 65 —3	+45	— 8	+7	+1
86	691	1 172 5	558 15	324 3	61 3	45	8	7	1
87	698	1 178 5	544 15	325 3	58 3	45	9	7	1
88	705	1 183 5	531 15	326 3	54 3	45	9	7	1
89	712	1 188 5	518 15	327 3	50 3	44	9	7	+1
90	+718	—1 194 + 5	—504 +15	+328 —3	+ 47 —3	+44	— 9	+7	0
91	725	1 199 5	491 15	329 3	44 3	44	10	7	0
92	731	1 204 6	478 15	330 3	40 3	44	10	7	0
93	737	1 208 6	464 15	331 3	37 3	44	10	7	0
94	743	1 213 6	451 15	331 3	34 3	43	10	7	0
95	+750	—1 218 + 6	—437 +15	+332 —4	+ 30 —3	+43	—10	+7	0
96	756	1 222 6	424 14	333 4	27 3	43	11	7	0
97	762	1 226 6	410 14	333 4	23 3	43	11	7	0
98	767	1 230 6	397 14	334 4	19 3	42	11	7	0
99	773	1 234 7	383 14	334 4	16 3	42	11	7	—1
100	+778	—1 238 + 7	—369 +14	+335 —4	+ 12 —3	+42	—12	+7	—1
101	784	1 241 7	356 14	335 4	8 3	42	12	7	1
102	789	1 244 7	342 14	336 4	5 3	42	12	7	1
103	794	1 248 7	329 14	336 4	+ 1 2	41	12	7	1
104	799	1 251 7	315 14	337 4	— 3 2	41	12	7	1
105	+804	—1 254 + 8	—302 +14	+337 —4	— 7 —2	+41	—13	+7	—1
106	809	1 256 8	288 14	337 4	10 2	41	13	7	1
107	813	1 259 8	275 14	337 4	14 2	41	13	7	1
108	818	1 262 8	261 14	338 4	17 2	41	13	7	2
109	822	1 264 8	247 13	338 4	21 2	41	13	7	2
110	+826	—1 266 + 8	—234 +13	+338 —4	— 25 —2	+41	—13	+7	—2
111	830	1 268 8	220 13	338 4	29 2	40	13	7	2
112	834	1 270 9	207 13	338 4	33 2	40	14	7	2
113	838	1 272 9	193 13	338 4	36 2	40	14	7	2
114	842	1 273 9	180 13	338 4	40 2	40	14	7	2
115	+845	—1 275 + 9	—167 +13	+338 —4	— 44 —2	+40	—14	+7	—2
116	848	1 276 9	153 13	337 4	48 2	40	14	7	2
117	852	1 277 9	140 13	337 4	52 2	40	15	7	2
118	855	1 278 9	126 13	337 4	55 2	39	15	7	3
119	857	1 279 10	113 13	336 4	59 2	39	15	7	3
120	+860	—1 279 +10	—100 +13	+336 —4	— 63 —2	+39	—15	+7	—3

The numbers in column Sec. Var. are to be multiplied by T and added to the others, T being the time after 1900 in units of a century.

This table gives units of the seventh place of decimals.

TABLE XXIV.—Arg. 2. *Action of Saturn.*

Arg.	($\rho. c. 0$)	($\rho. s. 1$)	Sec. Var.	($\rho. c. 1$)	Sec. Var.	($\rho. s. 2$)	Sec. Var.	($\rho. c. 2$)	Sec. Var.	($\rho. s. 3$)	($\rho. c. 3$)	($\rho. s. 4$)	($\rho. c. 4$)
120	+860	-1 279	+10	-100	+13	+336	-4	-63	-2	+39	-15	+7	-3
121	862	1 280	10	87	12	336	4	67	2	39	15	7	3
122	865	1 280	10	73	12	335	4	71	2	39	15	7	3
123	867	1 281	10	60	12	335	4	75	2	39	16	7	3
124	869	1 281	10	46	12	334	4	78	2	39	16	7	3
125	+871	-1 281	+10	-33	+12	+334	-4	-82	-2	+38	-16	+7	-3
126	873	1 281	10	20	12	333	4	86	1	38	16	7	3
127	875	1 280	10	-7	12	332	4	90	1	38	16	6	3
128	876	1 280	11	+6	12	331	4	94	1	38	16	6	4
129	878	1 279	11	19	12	331	4	97	1	38	17	6	4
130	+879	-1 279	+11	+32	+11	+330	-4	-101	-1	+38	-17	+6	-4
131	880	1 278	11	45	11	329	4	105	1	38	17	6	4
132	881	1 277	11	58	11	328	4	109	1	38	17	6	4
133	881	1 276	11	71	11	327	4	113	1	38	17	6	4
134	882	1 275	11	84	11	326	4	117	1	38	18	6	4
135	+882	-1 273	+11	+97	+11	+324	-4	-120	-1	+38	-18	+6	-4
136	882	1 272	11	109	11	323	4	124	1	37	18	6	4
137	882	1 270	11	122	11	322	4	128	1	37	18	6	4
138	882	1 269	12	135	11	321	4	131	1	37	18	6	4
139	882	1 267	12	148	10	319	4	135	1	37	18	6	4
140	+882	-1 265	+12	+160	+10	+318	-4	-139	-1	+37	-19	+6	-5
141	881	1 263	12	173	10	317	4	142	1	37	19	5	5
142	880	1 261	12	186	10	315	4	146	1	37	19	5	5
143	880	1 258	12	198	10	314	4	150	1	37	19	5	5
144	879	1 256	12	211	10	312	4	154	-1	37	19	5	5
145	+878	-1 253	+12	+223	+10	+311	-4	-157	0	+37	-20	+5	-5
146	876	1 250	12	236	10	309	4	160	0	37	20	5	5
147	874	1 247	13	248	9	307	4	164	0	37	20	5	5
148	872	1 244	13	260	9	306	4	167	0	37	20	5	5
149	871	1 241	13	273	9	304	4	171	0	37	20	5	5
150	+869	-1 238	+13	+285	+9	+302	-4	-175	0	+37	-20	+5	-5
151	867	1 235	13	297	9	300	4	178	0	37	21	5	5
152	865	1 231	13	310	9	298	4	182	0	36	21	5	5
153	862	1 228	13	322	9	296	4	185	0	36	21	5	5
154	860	1 224	13	334	8	294	4	189	0	36	21	4	5
155	+857	-1 220	+13	+346	+8	+292	-4	-192	0	+36	-22	+4	-6
156	854	1 216	14	358	8	290	4	195	0	36	22	4	6
157	851	1 212	14	370	8	288	4	199	0	36	22	4	6
158	848	1 208	14	382	8	285	4	202	0	36	22	4	6
159	845	1 204	14	394	8	283	4	205	0	36	22	4	6
160	+842	-1 200	+14	+406	+8	+281	-4	-208	0	+36	-23	+4	-6
161	839	1 195	14	418	8	278	4	212	0	36	23	4	6
162	835	1 191	14	430	7	276	4	215	0	36	23	4	6
163	831	1 186	14	442	7	273	4	218	0	36	23	3	6
164	827	1 181	14	453	7	271	4	221	+1	36	24	3	6
165	+824	-1 177	+14	+465	+7	+268	-4	-224	+1	+36	-24	+3	-6
166	820	1 172	14	477	7	266	4	227	1	36	24	3	6
167	816	1 167	14	488	7	263	4	230	1	36	24	3	6
168	811	1 161	14	500	6	260	4	233	1	36	25	3	6
169	807	1 156	14	511	6	257	4	236	1	36	25	3	6
170	+803	-1 150	+15	+523	+6	+255	-4	-239	+1	+36	-25	+3	-6
171	798	1 145	15	534	6	252	4	242	1	36	25	3	6
172	793	1 139	15	546	6	250	4	245	1	36	26	3	6
173	788	1 133	15	557	6	247	4	248	1	36	26	3	6
174	784	1 127	15	568	6	244	4	251	1	36	26	3	6
175	+779	-1 121	+15	+580	+5	+241	-4	-253	+1	+36	-26	+3	-6
176	774	1 115	15	591	5	238	4	256	1	36	27	3	6
177	768	1 109	15	602	5	235	4	259	1	35	27	2	6
178	763	1 103	15	613	5	232	4	261	1	35	27	2	6
179	758	1 096	15	624	5	229	4	264	1	35	27	2	6
180	+752	-1 090	+15	+635	+5	+226	-4	-266	+1	+35	-28	+2	-6

The numbers in column Sec. Var. are to be multiplied by T and added to the others, T being the time after 1900 in units of a century.

This table gives units of the seventh place of decimals.

TABLE XXIV.—Arg. 2. *Action of Saturn.*

Arg.	(ρ . C. 0)	(ρ . S. 1)	Sec. Var.	(ρ . C. 1)	Sec. Var.	(ρ . S. 2)	Sec. Var.	(ρ . C. 2)	Sec. Var.	(ρ . S. 3)	(ρ . C. 3)	(ρ . S. 4)	(ρ . C. 4)
180	+752	-1 090	+15	+ 635	+5	+226	-4	-266	+1	+35	-28	+2	-6
181	747	1 083	15	646	5	223	4	269	1	35	28	2	6
182	741	1 076	15	657	4	220	4	271	1	35	28	2	6
183	736	1 069	15	668	4	216	4	274	1	35	29	2	6
184	730	1 063	15	679	4	213	4	276	2	35	29	2	6
185	+724	-1 056	+15	+ 689	+4	+210	-4	-278	+2	+35	-30	+2	-6
186	718	1 048	15	700	4	207	4	281	2	35	30	1	6
187	712	1 041	15	711	4	204	4	283	2	35	30	1	6
188	706	1 034	15	722	3	200	4	285	2	35	31	1	6
189	700	1 026	15	732	3	197	4	287	2	35	31	1	6
190	+694	-1 019	+16	+ 743	+3	+193	-4	-289	+2	+35	-31	+1	-6
191	687	1 011	16	753	3	190	4	291	2	35	32	1	6
192	681	1 004	16	764	3	187	4	293	2	34	32	1	6
193	675	996	16	774	3	183	4	296	2	34	32	1	6
194	668	988	16	784	2	180	4	298	2	34	33	1	6
195	+662	- 980	+16	+ 795	+2	+176	-4	-300	+2	+34	-33	+1	-6
196	655	971	16	805	2	173	4	301	2	34	33	1	6
197	648	963	16	815	2	169	4	303	2	34	34	+1	6
198	642	955	16	825	2	166	4	305	2	34	34	0	6
199	635	946	16	835	2	162	4	307	2	34	34	0	6
200	+628	- 938	+16	+ 845	+2	+159	-4	-308	+2	+34	-35	0	-6
201	621	929	16	855	1	155	4	310	2	34	35	0	6
202	615	920	16	865	1	152	4	311	2	33	36	0	6
203	608	911	16	874	1	148	4	313	2	33	36	0	6
204	601	903	16	884	1	144	4	315	2	33	36	0	6
205	+594	- 894	+16	+ 894	+1	+141	-4	-316	+2	+33	-37	0	-6
206	587	885	16	903	+1	137	4	318	2	33	37	0	6
207	580	875	16	913	0	133	4	319	2	33	38	-1	6
208	573	866	16	922	0	129	4	320	2	33	38	1	6
209	566	856	16	931	0	126	4	321	2	32	39	1	6
210	+558	- 847	+16	+ 941	0	+122	-4	-322	+3	+32	-39	-1	-6
211	551	837	16	950	0	118	3	323	3	32	40	1	6
212	544	827	16	959	0	115	3	325	3	32	40	1	6
213	537	817	16	968	-1	111	3	326	3	32	40	1	6
214	529	808	16	977	1	107	3	327	3	31	41	1	6
215	+522	- 798	+16	+ 986	-1	+103	-3	-328	+3	+31	-41	-1	-6
216	514	788	16	994	1	100	3	329	3	31	42	1	6
217	507	778	16	1 003	1	96	3	330	3	31	42	1	6
218	500	767	16	1 012	1	92	3	331	3	31	43	1	6
219	492	757	16	1 020	2	88	3	332	3	30	43	1	6
220	+485	- 747	+16	+1 029	-2	+ 84	-3	-332	+3	+30	-44	-2	-6
221	477	736	16	1 037	2	80	3	333	3	30	44	2	6
222	470	726	16	1 045	2	76	3	334	3	30	44	2	6
223	462	715	16	1 053	2	73	3	334	3	29	45	2	6
224	455	704	16	1 061	2	69	3	335	3	29	45	2	5
225	+447	- 693	+16	+1 069	-3	+ 65	-3	-336	+3	+29	-46	-2	-5
226	440	682	16	1 077	3	61	3	336	3	29	46	2	5
227	432	671	16	1 085	3	57	3	337	3	28	47	2	5
228	424	660	16	1 093	3	53	3	337	3	28	47	2	5
229	416	649	16	1 101	3	49	3	337	3	28	48	2	5
230	+409	- 638	+16	+1 108	-3	+ 46	-3	-338	+3	+27	-48	-2	-5
231	401	626	15	1 116	4	42	3	338	3	27	48	2	5
232	393	615	15	1 123	4	38	3	338	3	27	49	2	5
233	386	603	15	1 130	4	34	3	338	3	26	49	2	5
234	378	592	15	1 137	4	30	3	338	3	26	50	2	5
235	+370	- 580	+15	+1 144	-4	+ 26	-3	-339	+3	+26	-50	-2	-5
236	363	569	15	1 151	4	22	3	339	3	25	51	2	5
237	355	557	15	1 158	5	19	3	339	3	25	51	3	5
238	347	545	15	1 165	5	15	2	339	3	24	52	3	5
239	339	533	15	1 171	5	11	2	339	3	24	52	3	5
240	+332	- 521	+15	+1 178	-5	+ 7	-2	-339	+3	+24	-52	-3	-5

The numbers in column Sec. Var. are to be multiplied by T and added to the others, T being the time after 1900 in units of a century.

This table gives units of the seventh place of decimals.

TABLE XXIV.—Arg. 2. *Action of Saturn.*

Arg.	(ρ . c. 0)	(ρ . s. 1) Sec. Var.	(ρ . c. 1) Sec. Var.	(ρ . s. 2) Sec. Var.	(ρ . c. 2) Sec. Var.	(ρ . s. 3)	(ρ . c. 3)	(ρ . s. 4)	(ρ . c. 4)
240	+332	-521 +15	+1 178 -5	+ 7 -2	-339 +3	+24	-52	-3	-5
241	324	509 15	1 184 5	+ 3 2	338 3	23	53	3	4
242	316	497 15	1 191 5	0 2	338 3	23	53	3	4
243	308	485 15	1 197 5	- 4 2	338 3	22	54	3	4
244	301	473 15	1 203 6	8 2	338 3	22	54	3	4
245	+293	-460 +15	+1 209 -6	-12 -2	-337 +4	+21	-55	-3	-4
246	285	448 15	1 214 6	16 2	337 4	21	55	3	4
247	277	436 15	1 220 6	20 2	336 4	21	56	3	4
248	269	423 15	1 226 6	23 2	336 4	20	56	3	4
249	262	410 15	1 231 6	27 2	335 4	20	57	3	4
250	+254	-398 +15	+1 237 -6	-31 -2	-335 +4	+19	-57	-3	-4
251	246	385 15	1 242 7	34 2	334 4	19	58	3	4
252	239	372 14	1 247 7	38 2	334 4	18	58	3	4
253	231	360 14	1 252 7	42 2	333 4	18	58	3	4
254	223	347 14	1 257 7	46 2	332 4	17	59	3	4
255	+215	-334 +14	+1 261 -7	-49 -2	-331 +4	+17	-59	-3	-4
256	207	321 14	1 266 7	53 2	331 4	16	60	3	4
257	200	308 14	1 270 8	57 2	330 4	16	60	3	3
258	192	295 14	1 275 8	60 2	329 4	15	60	4	3
259	184	282 14	1 279 8	64 2	328 4	14	61	4	3
260	+177	-269 +14	+1 284 -8	-67 -2	-327 +4	+14	-61	-4	-3
261	169	256 14	1 288 8	71 2	326 4	13	62	4	3
262	161	243 14	1 292 8	74 2	325 4	13	62	4	3
263	153	230 14	1 296 9	78 1	324 4	12	62	4	3
264	146	216 13	1 299 9	82 1	323 4	11	63	4	3
265	+138	-203 +13	+1 303 -9	-85 -1	-322 +4	+11	-63	-4	-3
266	130	190 13	1 306 9	89 1	321 4	10	63	4	3
267	123	177 13	1 310 9	92 1	320 4	9	64	4	3
268	115	163 13	1 313 9	96 1	319 4	9	64	4	3
269	107	150 13	1 316 9	99 1	317 4	8	65	4	3
270	+100	-137 +13	+1 318 -10	-102 -1	-316 +4	+ 7	-65	-4	-3
271	92	123 13	1 321 10	106 1	315 4	6	65	4	3
272	85	110 13	1 324 10	109 1	313 4	6	66	4	3
273	77	96 13	1 326 10	113 1	312 4	5	66	4	2
274	69	83 13	1 328 10	116 1	310 4	4	66	4	2
275	+ 62	- 69 +12	+1 331 -10	-119 -1	-309 +4	+ 4	-66	-4	-2
276	54	55 12	1 333 10	123 1	307 4	3	67	4	2
277	47	42 12	1 335 10	126 1	306 4	2	67	4	2
278	39	28 12	1 337 11	129 1	304 4	2	68	4	2
279	32	15 12	1 338 11	132 1	302 4	+ 1	68	4	2
280	+ 24	- 1 +12	+1 339 -11	-136 -1	-301 +4	0	-68	-4	-2
281	17	+ 13 12	1 341 11	139 1	299 4	- 1	68	4	2
282	10	26 12	1 342 11	142 1	297 4	2	68	4	2
283	+ 2	40 12	1 343 11	145 1	295 4	2	69	4	2
284	- 5	54 12	1 344 11	148 1	293 4	3	69	4	2
285	- 12	+ 67 +11	+1 345 -11	-151 -1	-292 +4	- 4	-69	-4	-2
286	20	81 11	1 346 11	154 -1	290 4	5	69	4	2
287	27	94 11	1 347 12	157 0	288 4	6	69	4	2
288	34	108 11	1 347 12	160 0	286 4	6	70	4	2
289	42	122 11	1 347 12	163 0	284 4	7	70	4	2
290	- 49	+135 +11	+1 347 -12	-166 0	-282 +4	- 8	-70	-4	-2
291	56	149 11	1 347 12	169 0	280 4	9	70	4	1
292	63	163 10	1 347 12	172 0	278 4	10	70	4	1
293	70	176 10	1 347 12	175 0	276 4	11	70	4	1
294	77	190 10	1 346 12	178 0	274 4	12	70	4	1
295	- 84	+204 +10	+1 346 -13	-181 0	-272 +4	-12	-70	-4	-1
296	91	217 10	1 345 13	184 0	270 4	13	71	4	1
297	98	231 10	1 344 13	186 0	268 4	14	71	4	1
298	105	245 10	1 343 13	189 0	265 4	15	71	4	1
299	112	258 9	1 342 13	192 0	263 4	16	71	4	1
300	-119	+272 + 9	+1 341 -13	-195 0	-261 +4	-17	-71	-4	-1

The numbers in column Sec. Var. are to be multiplied by T and added to the others, T being the time after 1900 in units of a century.

This table gives units of the seventh place of decimals.

TABLE XXIV.—Arg. 2. *Action of Saturn.*

Arg.	(ρ . c. 0)	(ρ . s. 1)	Sec. Var.	(ρ . c. 1)	Sec. Var.	(ρ . s. 2)	Sec. Var.	(ρ . c. 2)	Sec. Var.	(ρ . s. 3)	(ρ . c. 3)	(ρ . s. 4)	(ρ . c. 4)	
300	-119	+	272	+9	+1 341	-13	-195	0	-261	+4	-17	-71	-4	-1
301	126		285	9	1 339	13	197	0	258	4	18	71	3	1
302	133		299	9	1 338	13	200	0	256	4	19	71	3	1
303	140		312	9	1 336	13	203	0	254	4	20	71	3	1
304	147		326	9	1 334	13	205	0	251	4	21	71	3	1
305	-153	+	339	+9	+1 332	-14	-208	0	-249	+4	-22	-71	-3	-1
306	160		353	9	1 330	14	210	0	247	4	22	71	3	1
307	167		366	8	1 328	14	213	0	244	4	23	71	3	1
308	174		380	8	1 325	14	215	0	242	4	24	71	3	1
309	181		393	8	1 323	14	217	0	239	4	25	71	3	1
310	-187	+	406	+8	+1 320	-14	-220	0	-237	+4	-26	-71	-3	-1
311	194		420	8	1 317	14	222	0	234	4	27	70	3	0
312	200		433	8	1 314	14	225	+1	232	4	28	70	3	0
313	207		446	8	1 311	14	227	1	229	4	29	70	3	0
314	213		459	7	1 308	14	229	1	226	4	30	70	3	0
315	-220	+	473	+7	+1 304	-14	-231	+1	-224	+4	-31	-70	-3	0
316	226		486	7	1 300	14	233	1	221	4	32	70	3	0
317	233		499	7	1 296	14	235	1	218	4	33	70	3	0
318	239		512	7	1 292	15	237	1	215	4	34	69	3	0
319	246		525	7	1 288	15	239	1	213	4	35	69	3	0
320	-252	+	538	+7	+1 284	-15	-242	+1	-210	+4	-36	-69	-3	0
321	259		551	6	1 280	15	244	1	207	4	37	69	3	0
322	265		564	6	1 275	15	246	1	204	4	38	68	3	0
323	271		576	6	1 271	15	248	1	202	4	39	68	3	0
324	277		589	6	1 266	15	249	1	199	4	40	68	3	0
325	-283	+	602	+6	+1 261	-15	-251	+1	-196	+4	-41	-67	-3	0
326	289		614	6	1 256	15	253	1	193	4	42	67	3	0
327	295		627	5	1 251	15	255	1	190	4	43	67	3	0
328	301		639	5	1 246	15	257	1	188	4	43	66	3	0
329	307		652	5	1 240	15	258	1	185	4	44	66	3	0
330	-313	+	664	+5	+1 234	-16	-260	+1	-182	+4	-45	-66	-3	0
331	319		677	5	1 229	16	262	1	179	4	46	65	3	0
332	325		689	5	1 223	16	263	1	176	4	47	65	3	0
333	331		701	4	1 217	16	265	1	173	4	48	64	3	0
334	337		713	4	1 210	16	267	1	170	4	49	64	2	0
335	-343	+	725	+4	+1 204	-16	-268	+1	-167	+4	-50	-63	-2	0
336	349		737	4	1 197	16	270	1	164	4	51	63	2	0
337	354		749	4	1 191	16	271	1	161	4	52	62	2	0
338	360		761	4	1 184	16	272	1	158	4	53	62	2	0
339	366		773	3	1 177	16	274	2	155	4	54	61	2	0
340	-371	+	785	+3	+1 170	-16	-275	+2	-152	+4	-55	-61	-2	0
341	377		796	3	1 163	16	276	2	149	3	56	60	2	0
342	382		808	3	1 155	16	278	2	146	3	57	60	2	0
343	388		819	3	1 148	16	279	2	143	3	57	59	2	0
344	393		831	3	1 140	16	280	2	140	3	58	58	2	0
345	-399	+	842	+2	+1 132	-16	-281	+2	-137	+3	-59	-58	-2	0
346	404		853	2	1 124	16	283	2	134	3	60	57	2	0
347	409		865	2	1 116	16	284	2	131	3	61	56	2	0
348	415		876	2	1 108	16	285	2	128	3	62	56	2	0
349	420		887	2	1 100	16	286	2	124	3	63	55	2	0
350	-425	+	897	+2	+1 092	-16	-287	+2	-121	+3	-64	-54	-2	0
351	430		908	1	1 083	16	288	2	118	3	64	54	2	0
352	435		919	1	1 074	16	289	2	115	3	65	53	2	0
353	440		930	1	1 066	16	290	2	112	3	66	52	2	0
354	445		940	1	1 057	16	290	2	109	3	67	51	2	0
355	-450	+	951	+1	+1 048	-16	-291	+2	-106	+3	-68	-51	-2	0
356	455		961	+1	1 038	16	292	2	102	3	69	50	2	0
357	460		971	0	1 029	16	293	2	99	3	69	49	2	0
358	465		981	0	1 019	16	293	2	96	3	70	48	2	0
359	470		991	0	1 010	16	294	2	93	3	71	47	2	0
360	-475	+	1 001	0	+1 000	-16	-295	+2	-90	+3	-72	-46	-2	0

The numbers in column Sec. Var. are to be multiplied by T and added to the others, T being the time after 1900 in units of a century.

This table gives units of the seventh place of decimals.

TABLE XXIV.—Arg. 2. *Action of Saturn.*

Arg.	($\rho. c. 0$)	($\rho. s. 1$) Sec. Var.	($\rho. c. 1$) Sec. Var.	($\rho. s. 2$) Sec. Var.	($\rho. c. 2$) Sec. Var.	($\rho. s. 3$)	($\rho. c. 3$)	($\rho. s. 4$)	($\rho. c. 4$)
360	-475	+1 001 0	+1 000 -16	-295 +2	-90 +3	-72	-46	-2	0
361	480	1 011 0	990 16	296 2	87 3	72	46	2	0
362	484	1 021 -1	980 16	296 2	83 3	73	45	2	0
363	489	1 030 1	970 16	297 2	80 3	74	44	2	0
364	493	1 040 1	960 16	297 2	77 3	74	43	2	0
365	-498	+1 049 -1	+ 950 -16	-298 +2	-74 +3	-75	-42	-2	0
366	502	1 059 1	939 16	298 2	71 3	76	41	2	0
367	507	1 068 1	929 16	299 2	68 3	77	40	2	0
368	511	1 077 2	918 16	299 2	65 3	77	39	2	0
369	516	1 086 2	907 16	299 2	61 3	78	38	2	0
370	-520	+1 095 -2	+ 896 -16	-300 +2	-58 +3	-79	-37	-2	0
371	524	1 104 2	885 16	300 2	55 3	79	36	2	0
372	528	1 112 2	874 16	300 2	52 3	80	35	2	0
373	532	1 121 2	863 16	301 3	49 3	80	34	2	0
374	537	1 129 3	851 16	301 3	46 3	81	33	2	0
375	-541	+1 138 -3	+ 840 -16	-301* +3	-42 +3	-81	-32	-2	0
376	545	1 146 3	828 16	301 3	39 3	82	31	2	0
377	549	1 154 3	816 16	301 3	36 3	82	30	2	0
378	553	1 162 3	805 16	301 3	33 3	83	29	2	0
379	557	1 170 3	793 16	301 3	29 3	84	28	2	0
380	-561	+1 178 -4	+ 781 -16	-301 +3	-26 +3	-84	-27	-2	0
381	564	1 186 4	769 16	301 3	23 3	85	26	2	0
382	568	1 193 4	757 16	301 3	20 3	85	25	2	0
383	572	1 200 4	745 16	301 3	17 3	85	23	2	0
384	575	1 208 4	732 16	301 3	14 2	86	22	2	0
385	-579	+1 215 -5	+ 720 -16	-301 +3	-11 +2	-86	-21	-2	0
386	582	1 222 5	707 16	301 3	8 2	86	20	1	0
387	586	1 229 5	695 16	301 3	4 2	87	19	1	0
388	589	1 235 5	683 16	301 3	-1 2	87	18	1	0
389	593	1 242 5	670 16	301 3	+ 2 2	88	17	1	0
390	-596	+1 249 -5	+ 656 -16	-300 +3	+ 5 +2	-88	-15	-1	0
391	599	1 255 5	643 15	300 3	8 2	88	14	1	0
392	603	1 261 6	630 15	300 3	11 2	88	13	1	0
393	606	1 267 6	617 15	299 3	14 2	89	12	1	0
394	609	1 273 6	604 15	299 3	17 2	89	11	1	0
395	-612	+1 279 -6	+ 590 -15	-298 +3	+20 +2	-89	-10	-1	0
396	615	1 285 6	577 15	298 3	23 2	89	8	1	0
397	618	1 290 6	563 15	298 3	26 2	90	7	1	0
398	621	1 296 7	549 15	297 3	29 2	90	6	1	0
399	624	1 301 7	536 15	297 3	32 2	90	5	1	0
400	-627	+1 306 -7	+ 522 -15	-296 +3	+35 +2	-90	-3	-1	0
401	629	1 311 7	508 15	296 3	38 2	90	2	1	0
402	632	1 316 7	494 15	295 3	41 2	90	-1	1	0
403	635	1 321 7	481 15	294 3	44 2	90	0	1	0
404	637	1 325 8	467 15	293 3	47 2	90	+ 2	1	0
405	-640	+1 330 -8	+ 453 -14	-293 +3	+50 +2	-90	+ 3	-1	0
406	642	1 334 8	439 14	292 3	53 2	90	4	1	0
407	645	1 339 8	424 14	291 3	56 2	90	5	1	0
408	647	1 343 8	410 14	291 3	59 2	90	6	1	0
409	649	1 347 8	396 14	290 3	62 2	90	8	1	0
410	-652	+1 350 -9	+ 381 -14	-289 +3	+65 +2	-90	+ 9	-2	0
411	654	1 354 9	367 14	288 3	68 2	90	10	2	0
412	656	1 358 9	353 14	287 3	71 2	90	11	2	0
413	658	1 361 9	338 14	286 3	74 2	90	13	2	0
414	660	1 364 9	323 14	285 3	77 2	90	14	2	0
415	-662	+1 367 -9	+ 309 -14	-284 +3	+79 +2	-90	+15	-2	0
416	664	1 370 9	294 13	283 3	82 2	90	16	2	0
417	666	1 373 10	279 13	282 3	85 2	89	17	2	0
418	668	1 376 10	265 13	281 3	88 2	89	19	2	0
419	670	1 378 10	250 13	280 3	91 2	89	20	2	0
420	-672	+1 380 -10	+ 235 -13	-279 +3	+94 +2	-89	+21	-2	0

The numbers in column Sec. Var. are to be multiplied by T and added to the others, T being the time after 1900 in units of a century.

This table gives units of the seventh place of decimals.

TABLE XXIV.—Arg. 2. *Action of Saturn.*

Arg.	(ρ . C. 0)	(ρ . S. 1) Sec. Var.	(ρ . C. 1) Sec. Var.	(ρ . S. 2) Sec. Var.	(ρ . C. 2) Sec. Var.	(ρ . S. 3)	(ρ . C. 3)	(ρ . S. 4)	(ρ . C. 4)
420	-672	+1 380 --10	+235 --13	-279 +3	+ 94 +2	-89	+21	-2	0
421	673	1 382 10	220 13	278 3	96 1	89	22	2	0
422	675	1 384 10	205 13	277 3	99 1	88	24	2	0
423	676	1 386 10	190 13	276 3	102 1	88	25	2	0
424	678	1 388 10	175 13	275 3	105 1	88	26	2	0
425	-679	+1 390 --11	+160 --12	-274 +3	+107 +1	-87	+27	-2	-1
426	681	1 391 11	145 12	272 3	110 1	87	28	2	1
427	682	1 392 11	130 12	271 3	113 1	87	30	2	1
428	683	1 393 11	115 12	270 3	115 1	86	31	2	1
429	685	1 394 11	100 12	269 3	118 1	86	32	2	1
430	-686	+1 395 --11	+ 85 --12	-268 +4	+121 +1	-85	+33	-2	-1
431	687	1 396 11	70 12	266 4	123 1	85	34	2	1
432	688	1 396 12	55 12	265 4	126 1	84	36	2	1
433	689	1 397 12	40 11	263 4	128 1	84	37	2	1
434	690	1 397 12	25 11	262 4	131 1	83	38	2	1
435	-691	+1 397 --12	+ 10 --11	-261 +4	+133 +1	-83	+39	-2	-1
436	692	1 397 12	- 5 11	259 4	136 1	82	40	2	1
437	693	1 397 12	21 11	258 4	139 1	82	41	2	1
438	693	1 396 12	36 11	256 4	141 1	81	42	2	1
439	694	1 396 12	51 11	254 4	144 1	81	43	2	1
440	-695	+1 395 --12	- 67 --11	-252 +4	+146 +1	-80	+45	-2	-1
441	695	1 395 13	82 11	251 4	148 1	79	46	2	1
442	696	1 394 13	97 10	250 4	151 1	79	47	2	1
443	696	1 393 13	112 10	248 4	153 1	78	48	2	1
444	697	1 391 13	128 10	247 4	156 1	77	49	2	1
445	-697	+1 390 --13	-143 --10	-245 +4	+158 +1	-77	+50	-2	-1
446	697	1 388 13	158 10	243 4	160 +1	76	51	2	0
447	698	1 386 13	173 10	242 4	163 0	75	52	2	0
448	698	1 384 13	188 9	240 4	165 0	74	53	3	0
449	698	1 382 13	203 9	238 4	167 0	74	54	3	0
450	-698	+1 380 --14	-219 -- 9	-236 +4	+170 0	-73	+55	-3	0
451	698	1 378 14	234 9	235 4	172 0	72	56	3	0
452	698	1 375 14	249 9	233 4	174 0	71	57	3	0
453	697	1 372 14	264 9	231 4	176 0	70	58	3	0
454	697	1 370 14	279 9	229 4	179 0	70	59	3	0
455	-697	+1 367 --14	-294 -- 8	-228 +4	+181 0	-69	+60	-3	0
456	697	1 364 14	309 8	226 4	183 0	68	60	3	0
457	696	1 360 14	324 8	224 4	185 0	67	61	3	0
458	696	1 357 14	339 8	222 4	187 0	66	62	3	0
459	695	1 353 14	354 8	220 4	189 0	65	63	3	0
460	-695	+1 349 --14	-369 -- 8	-218 +4	+191 0	-64	+64	-3	0
461	694	1 346 14	383 8	216 4	193 0	63	65	3	0
462	694	1 342 15	398 7	214 4	196 0	63	65	3	0
463	693	1 338 15	413 7	212 4	198 0	62	66	3	0
464	692	1 333 15	428 7	210 4	200 0	61	67	3	0
465	-691	+1 328 --15	-442 -- 7	-208 +4	+202 0	-60	+68	-3	0
466	690	1 324 15	457 7	206 4	204 0	59	69	3	0
467	689	1 320 15	471 7	204 4	205 0	58	69	3	0
468	688	1 315 15	486 6	202 4	207 0	57	70	3	0
469	687	1 310 15	500 6	200 4	209 0	56	71	3	0
470	-686	+1 305 --15	-515 -- 6	-198 +4	+211 0	-55	+71	-3	0
471	685	1 300 15	529 6	196 4	213 0	54	72	3	0
472	683	1 294 15	543 6	194 4	215 0	53	73	3	0
473	682	1 288 15	557 6	191 4	217 0	52	74	3	0
474	681	1 283 15	571 5	189 4	218 0	51	74	3	0
475	-679	+1 277 --15	-586 -- 5	-187 +4	+220 -1	-50	+75	-3	0
476	678	1 271 15	600 5	185 4	222 1	48	75	3	0
477	676	1 265 15	614 5	183 4	224 1	47	76	3	0
478	674	1 258 16	627 5	180 4	225 1	46	76	3	0
479	673	1 252 16	641 5	178 4	227 1	45	77	3	0
480	-671	+1 245 --16	-655 -- 5	-176 +4	+228 -1	-44	+78	-3	0

The numbers in column Sec. Var. are to be multiplied by T and added to the others, T being the time after 1900 in units of a century.

This table gives units of the seventh place of decimals.

TABLE XXIV.—Arg. 2. *Action of Saturn.*

Arg.	(p. c. 0)	(p. s. 1) Sec. Var.	(p. c. 1) Sec. Var.	(p. s. 2) Sec. Var.	(p. c. 2) Sec. Var.	(p. s. 3)	(p. c. 3)	(p. s. 4)	(p. c. 4)
480	-671	+1 245 -16	- 655 -5	-176 +4	+228 -1	-44	+78	-3	0
481	669	1 239 16	669 4	174 4	230 1	43	78	3	0
482	667	1 232 16	682 4	172 4	231 1	42	79	4	0
483	665	1 225 16	696 4	169 4	233 1	41	79	4	0
484	663	1 218 16	709 4	167 4	235 1	40	79	4	0
485	-661	+1 211 -16	- 723 -4	-165 +4	+237 -1	-38	+80	-4	+1
486	659	1 203 16	736 3	162 4	238 1	37	80	4	1
487	656	1 196 16	749 3	160 4	240 1	36	81	4	1
488	654	1 188 16	762 3	158 4	241 1	35	81	4	1
489	652	1 180 16	775 3	156 4	242 1	34	81	4	1
490	-649	+1 172 -16	- 788 -3	-153 +4	+244 -1	-33	+82	-4	+1
491	647	1 164 16	801 3	151 4	245 1	32	82	4	1
492	644	1 156 16	813 2	148 4	247 1	31	82	4	1
493	642	1 148 16	826 2	146 4	248 1	29	83	4	1
494	639	1 140 16	839 2	144 4	249 1	28	83	4	1
495	-636	+1 131 -16	- 851 -2	-141 +4	+251 -1	-27	+83	-4	+1
496	633	1 122 16	863 2	139 4	252 1	26	83	4	1
497	630	1 114 16	875 2	136 4	254 1	25	83	4	1
498	628	1 105 16	887 1	134 4	255 1	24	84	4	1
499	625	1 096 16	899 1	131 4	256 1	23	84	4	1
500	-622	+1 086 -16	- 911 -1	-129 +4	+257 -1	-21	+84	-4	+2
501	619	1 077 16	923 1	126 4	258 1	20	84	4	2
502	615	1 068 16	935 1	124 4	259 2	19	84	4	2
503	612	1 058 16	946 -1	121 4	260 2	18	84	4	2
504	609	1 049 16	958 0	119 4	262 2	17	84	4	2
505	-605	+1 039 -16	- 969 0	-116 +4	+263 -2	-16	+84	-4	+2
506	602	1 029 16	980 0	114 4	264 2	14	84	4	2
507	598	1 019 16	992 0	111 4	265 2	13	84	4	2
508	595	1 009 16	1 003 0	109 4	266 2	12	84	4	2
509	591	999 16	1 013 +1	106 4	267 2	11	84	4	2
510	-588	+ 989 -16	-1 024 +1	-104 +4	+268 -2	-10	+84	-4	+2
511	584	978 16	1 035 1	101 3	269 2	9	84	4	2
512	580	968 16	1 045 1	98 3	270 2	8	84	4	2
513	576	957 16	1 055 1	96 3	271 2	7	84	4	2
514	573	946 16	1 066 1	93 3	272 2	5	84	4	2
515	-569	+ 935 -16	-1 076 +2	- 90 +3	+273 -2	- 4	+84	-4	+2
516	565	924 16	1 086 2	87 3	274 2	3	84	4	2
517	561	913 16	1 096 2	85 3	274 2	2	84	4	3
518	556	902 16	1 106 2	82 3	275 2	- 1	83	4	3
519	552	891 16	1 115 2	79 3	276 2	0	83	4	3
520	-548	+ 879 -16	-1 125 +2	- 76 +3	+277 -2	+ 1	+83	-4	+3
521	544	868 16	1 134 2	74 3	278 2	2	83	4	3
522	539	856 16	1 143 3	72 3	278 2	3	83	4	3
523	535	845 16	1 152 3	69 3	279 2	4	83	4	3
524	531	833 16	1 161 3	66 3	280 2	5	82	4	3
525	-526	+ 821 -16	-1 170 +3	- 64 +3	+280 -2	+ 7	+82	-4	+3
526	521	809 16	1 178 3	61 3	281 2	8	82	4	3
527	517	797 16	1 187 3	58 3	282 2	9	81	4	3
528	512	785 16	1 195 4	56 3	282 3	10	81	4	3
529	507	773 16	1 203 4	53 3	283 3	11	81	4	4
530	-502	+ 760 -16	-1 211 +4	- 50 +3	+283 -3	+12	+81	-4	+4
531	497	748 16	1 219 4	47 3	284 3	13	80	4	4
532	492	735 16	1 227 4	45 3	285 3	14	80	4	4
533	487	722 16	1 235 4	42 3	285 3	15	79	3	4
534	482	710 16	1 242 5	39 3	286 3	16	79	3	4
535	-477	+ 697 -15	-1 250 +5	- 36 +3	+286 -3	+17	+79	-3	+4
536	472	684 15	1 257 5	33 3	286 3	18	78	3	4
537	467	672 15	1 264 5	31 3	287 3	19	78	3	4
538	462	659 15	1 270 5	28 3	287 3	20	77	3	4
539	456	645 15	1 277 5	25 3	287 3	21	77	3	4
540	-451	+ 632 -15	-1 283 +6	- 22 +3	+288 -3	+22	+76	-3	+4

The numbers in column Sec. Var. are to be multiplied by T and added to the others, T being the time after 1900 in units of a century.

This table gives units of the seventh place of decimals.

TABLE XXIV.—Arg. 2. *Action of Saturn.*

Arg.	(ρ . c. 0)	(ρ . s. 1) Sec. Var.	(ρ . c. 1) Sec. Var.	(ρ . s. 2) Sec. Var.	(ρ . c. 2) Sec. Var.	(ρ . s. 3)	(ρ . c. 3)	(ρ . s. 4)	(ρ . c. 4)
540	-451	+632 -15	-1 283 + 6	- 22 +3	+288 -3	+22	+76	-3	+4
541	445	619 15	1 290 6	19 3	288 3	22	76	3	4
542	440	606 15	1 296 6	17 3	289 3	23	75	3	4
543	434	592 15	1 302 6	14 3	289 3	24	75	3	4
544	429	579 15	1 308 6	11 3	289 3	25	74	3	4
545	-423	+565 -15	-1 314 + 6	- 8 +3	+289 -3	+26	+74	-3	+5
546	417	552 15	1 319 7	5 3	289 3	27	73	3	5
547	411	538 15	1 325 7	- 2 3	289 3	28	73	3	5
548	406	525 15	1 330 7	0 3	290 3	28	72	3	5
549	400	511 14	1 335 7	+ 3 3	290 3	29	72	3	5
550	-394	+497 -14	-1 340 + 7	+ 6 +3	+290 -3	+30	+71	-3	+5
551	388	483 14	1 345 7	9 3	290 3	31	71	3	5
552	382	469 14	1 349 8	12 2	290 3	32	70	3	5
553	376	455 14	1 353 8	15 2	290 3	32	69	3	5
554	370	441 14	1 358 8	18 2	290 3	33	69	3	5
555	-364	+427 -14	-1 362 + 8	+ 20 +2	+290 -3	+34	+68	-3	+5
556	357	413 14	1 366 8	23 2	290 3	35	68	3	5
557	351	399 14	1 369 8	26 2	290 3	35	67	3	5
558	345	385 14	1 373 8	29 2	290 3	36	66	2	5
559	338	370 14	1 376 9	32 2	290 3	37	66	2	5
560	-332	+356 -14	-1 380 + 9	+ 34 +2	+289 -4	+38	+65	-2	+6
561	325	342 14	1 383 9	37 2	289 4	38	64	2	6
562	319	327 13	1 386 9	40 2	289 4	39	64	2	6
563	312	313 13	1 388 9	43 2	289 4	39	63	2	6
564	305	299 13	1 391 9	46 2	288 4	40	62	2	6
565	-298	+284 -13	-1 393 + 9	+ 49 +2	+288 -4	+41	+62	-2	+6
566	292	270 13	1 396 10	52 2	288 4	41	61	2	6
567	285	255 13	1 398 10	54 2	287 4	42	60	2	6
568	278	240 13	1 400 10	57 2	287 4	42	60	2	6
569	271	226 13	1 401 10	60 2	287 4	43	59	1	6
570	-264	+211 -13	-1 403 +10	+ 63 +2	+286 -4	+44	+58	-1	+6
571	257	196 13	1 404 10	66 2	286 4	44	57	1	6
572	250	182 12	1 406 10	69 2	285 4	45	57	1	6
573	243	167 12	1 407 10	72 2	285 4	45	56	1	6
574	235	152 12	1 408 11	74 2	284 4	46	55	1	6
575	-228	+138 -12	-1 408 +11	+ 77 +2	+284 -4	+46	+54	-1	+6
576	221	123 12	1 409 11	80 2	283 4	47	54	1	6
577	213	108 12	1 409 11	83 2	283 4	47	53	1	6
578	206	94 12	1 409 11	86 1	282 4	48	52	1	6
579	199	79 11	1 409 11	89 1	282 4	48	51	1	6
580	-192	+ 64 -11	-1 409 +11	+ 92 +1	+281 -4	+48	+51	-1	+6
581	184	49 11	1 408 11	94 1	280 4	49	50	-1	6
582	176	34 11	1 408 11	97 1	279 4	49	49	0	6
583	169	19 11	1 407 12	100 1	279 4	50	48	0	6
584	161	+ 5 11	1 406 12	103 1	278 4	50	48	0	6
585	-153	- 10 -11	-1 405 +12	+106 +1	+277 -4	+50	+47	0	+6
586	145	25 11	1 404 12	109 1	276 4	51	46	0	6
587	138	39 10	1 403 12	111 1	275 4	51	45	0	6
588	130	54 10	1 401 12	114 1	274 4	51	45	0	6
589	122	69 10	1 399 12	117 1	274 4	52	44	0	6
590	-114	- 83 -10	-1 397 +12	+120 +1	+273 -4	+52	+43	0	+6
591	106	98 10	1 395 12	122 1	272 4	52	42	0	6
592	99	112 10	1 393 13	125 1	271 4	53	42	+1	6
593	91	127 10	1 391 13	128 1	270 4	53	41	1	6
594	83	142 10	1 388 13	131 1	269 4	53	40	1	6
595	- 75	-157 -10	-1 386 +13	+134 +1	+268 -4	+53	+39	+1	+6
596	66	171 9	1 383 13	136 1	266 4	54	39	1	6
597	58	186 9	1 380 13	139 1	265 4	54	38	1	6
598	50	200 9	1 376 13	142 1	264 4	54	37	1	6
599	42	215 9	1 373 13	145 1	263 4	54	36	1	6
600	- 34	-229 - 9	-1 369 +13	+147 +1	+262 -4	+54	+36	+1	+6

The numbers in column Sec. Var. are to be multiplied by T and added to the others, T being the time after 1900 in units of a century.

This table gives units of the seventh place of decimals.

TABLE XXV.—Arg. 3. *Action of Jupiter.*

Arg.	(p. c. o)	(p. s. 1)	(p. c. 1)	(p. s. 2)	(p. c. 2)	Arg.	(p. c. o)	(p. s. 1)	(p. c. 1)	(p. s. 2)	(p. c. 2)
0	-1 029	-16	-27	-2	-2	60	-570	-46	+25	-5	+2
1	1 024	16	26	2	2	61	560	47	26	5	2
2	1 019	17	26	2	2	62	549	48	28	5	2
3	1 014	17	25	2	2	63	539	48	29	5	2
4	1 009	17	25	2	2	64	529	49	30	5	2
5	-1 004	-18	-24	-2	-2	65	-519	-49	+31	-5	+2
6	998	18	24	2	2	66	508	50	32	5	2
7	993	19	23	2	2	67	498	51	33	5	2
8	988	19	23	2	2	68	488	51	34	5	2
9	982	20	22	2	2	69	477	52	35	5	2
10	- 976	-20	-21	-2	-2	70	-466	-52	+36	-5	+2
11	971	21	21	2	2	71	455	53	38	5	2
12	965	21	20	2	2	72	444	54	39	5	3
13	959	22	19	2	1	73	434	54	40	5	3
14	953	22	19	2	1	74	423	55	41	5	3
15	- 946	-23	-18	-2	-1	75	-412	-55	+42	-6	+3
16	940	23	17	2	1	76	401	56	43	6	3
17	933	24	16	3	1	77	390	57	44	6	3
18	927	24	16	3	1	78	379	57	46	6	3
19	920	24	15	3	1	79	368	58	47	6	3
20	- 913	-25	-14	-3	-1	80	-357	-59	+48	-6	+3
21	907	25	13	3	1	81	345	59	49	6	3
22	900	26	13	3	1	82	334	60	50	6	3
23	893	26	12	3	1	83	323	60	51	6	3
24	886	27	11	3	1	84	312	61	52	6	3
25	- 878	-27	-10	-3	-1	85	-300	-62	+53	-6	+4
26	871	28	9	3	1	86	289	62	54	6	4
27	863	28	8	3	1	87	278	63	55	6	4
28	856	29	7	3	1	88	266	63	56	6	4
29	848	29	7	3	1	89	255	64	58	6	4
30	- 841	-30	- 6	-3	-1	90	-244	-64	+59	-6	+4
31	833	30	5	3	-1	91	232	65	60	6	4
32	825	31	4	3	0	92	221	66	61	6	4
33	817	31	3	3	0	93	209	66	62	6	4
34	809	32	2	3	0	94	198	67	63	6	4
35	- 801	-32	- 1	-3	0	95	-186	-67	+64	-6	+4
36	792	33	0	3	0	96	174	68	65	6	4
37	784	34	+ 1	3	0	97	163	69	66	6	4
38	775	34	2	4	0	98	151	69	67	6	4
39	767	35	3	4	0	99	140	70	68	6	4
40	- 758	-35	+ 4	-4	0	100	-128	-70	+69	-6	+4
41	750	36	5	4	0	101	116	71	70	6	4
42	741	36	6	4	0	102	104	72	71	6	5
43	732	37	7	4	0	103	93	72	72	6	5
44	723	37	8	4	+1	104	81	73	73	6	5
45	- 714	-38	+ 9	-4	+1	105	- 69	-73	+74	-6	+5
46	705	38	10	4	1	106	57	74	75	6	5
47	696	39	11	4	1	107	46	74	76	6	5
48	687	39	12	4	1	108	34	75	77	7	5
49	677	40	13	4	1	109	22	75	77	7	5
50	- 668	-40	+14	-4	+1	110	- 10	-76	+78	-7	+5
51	658	41	15	4	1	111	+ 2	76	79	7	5
52	649	42	16	4	1	112	13	77	80	7	5
53	639	42	18	4	1	113	25	77	81	7	5
54	629	43	19	4	1	114	37	78	82	7	5
55	- 620	-44	+20	-5	+1	115	+ 49	-78	+83	-7	+5
56	610	44	21	5	1	116	61	79	84	7	5
57	600	45	22	5	1	117	72	79	84	7	5
58	590	45	23	5	2	118	84	80	85	6	5
59	580	46	24	5	2	119	96	80	86	6	5
60	- 570	-46	+25	-5	+2	120	+108	-81	+87	-6	+6

This table gives units of the seventh place of decimals.

TABLE XXV.—Arg. 3. *Action of Jupiter.*

Arg.	(ρ . c. o.)	(ρ . s. 1)	(ρ . c. 1)	(ρ . s. 2)	(ρ . c. 2)	Arg.	(ρ . c. o.)	(ρ . s. 1)	(ρ . c. 1)	(ρ . s. 2)	(ρ . c. 2)
120	+108	-81	+ 87	-6	+6	180	+ 748	-83	+112	-3	+ 9
121	119	81	88	6	6	181	756	82	112	3	9
122	131	82	88	6	6	182	765	82	112	3	9
123	143	82	89	6	6	183	774	81	112	2	9
124	154	82	90	6	6	184	782	81	112	2	9
125	+166	-83	+ 91	-6	+6	185	+ 791	-80	+112	-2	+ 9
126	178	83	91	6	6	186	799	80	112	2	9
127	189	83	92	6	6	187	808	79	112	2	10
128	201	84	93	6	6	188	816	78	112	2	10
129	212	84	93	6	6	189	824	78	112	2	10
130	+224	-84	+ 94	-6	+6	190	+ 832	-77	+112	-2	+10
131	236	85	95	6	6	191	840	76	112	2	10
132	247	85	95	6	6	192	848	76	112	2	10
133	259	85	96	6	6	193	856	75	112	1	10
134	270	86	97	6	6	194	864	74	111	1	10
135	+282	-86	+ 97	-6	+6	195	+ 871	-73	+111	-1	+10
136	293	86	98	6	6	196	879	72	111	1	10
137	304	86	98	6	7	197	886	72	111	1	10
138	316	87	99	6	7	198	893	71	111	1	10
139	327	87	100	6	7	199	901	70	111	1	11
140	+338	-87	+100	-6	+7	200	+ 908	-69	+111	-1	+11
141	350	87	101	6	7	201	915	68	111	1	11
142	361	87	101	6	7	202	922	68	111	-1	11
143	372	88	102	6	7	203	928	67	111	0	11
144	383	88	102	6	7	204	935	66	110	0	11
145	+394	-88	+103	-6	+7	205	+ 942	-65	+110	0	+11
146	405	88	103	6	7	206	948	64	110	0	11
147	416	88	104	5	7	207	955	63	110	0	11
148	427	88	104	5	7	208	961	62	110	0	11
149	438	89	105	5	7	209	967	61	110	0	11
150	+449	-89	+105	-5	+7	210	+ 973	-60	+109	0	+11
151	460	89	105	5	7	211	979	59	109	0	11
152	470	89	106	5	7	212	985	57	109	+1	11
153	481	89	106	5	7	213	991	56	109	1	12
154	492	89	106	5	7	214	996	55	109	1	12
155	+503	-89	+107	-5	+8	215	+1002	-54	+108	+1	+12
156	513	89	107	5	8	216	1008	53	108	1	12
157	524	89	107	5	8	217	1013	52	108	1	12
158	534	89	108	5	8	218	1018	51	108	1	12
159	545	89	108	5	8	219	1023	49	108	1	12
160	+555	-88	+108	-5	+8	220	+1028	-48	+107	+1	+12
161	565	88	109	5	8	221	1033	47	107	1	12
162	575	88	109	4	8	222	1038	46	107	1	12
163	586	88	109	4	8	223	1042	44	107	2	12
164	596	88	109	4	8	224	1047	43	106	2	12
165	+606	-88	+110	-4	+8	225	+1051	-42	+106	+2	+12
166	616	87	110	4	8	226	1056	41	106	2	12
167	626	87	110	4	8	227	1060	39	106	2	13
168	635	87	110	4	8	228	1064	38	105	2	13
169	645	87	110	4	8	229	1068	37	105	2	13
170	+655	-87	+111	-4	+9	230	+1071	-35	+105	+2	+13
171	665	86	111	4	9	231	1075	34	105	2	13
172	674	86	111	4	9	232	1079	32	104	2	13
173	684	86	111	3	9	233	1082	31	104	2	13
174	693	85	111	3	9	234	1085	30	104	2	13
175	+702	-85	+111	-3	+9	235	+1088	-28	+104	+3	+13
176	711	85	111	3	9	236	1092	27	103	3	13
177	721	84	111	3	9	237	1095	25	103	3	13
178	730	84	111	3	9	238	1098	24	103	3	13
179	739	83	112	3	9	239	1100	22	103	3	13
180	+748	-83	+112	-3	+9	240	+1103	-21	+102	+3	+13

This table gives units of the seventh place of decimals.

TABLE XXV.—Arg. 3. *Action of Jupiter.*

Arg.	(p. c. o)	(p. s. 1)	(p. c. 1)	(p. s. 2)	(p. c. 2)	Arg.	(p. c. o)	(p. s. 1)	(p. c. 1)	(p. s. 2)	(p. c. 2)
240	+1 103	-21	+102	+3	+13	300	+1 032	+ 77	+91	+6	+13
241	1 105	19	102	3	13	301	1 027	79	91	6	13
242	1 108	18	102	3	13	302	1 022	80	91	6	13
243	1 110	16	102	3	13	303	1 017	82	90	6	13
244	1 112	15	101	3	13	304	1 012	83	90	6	13
245	+1 114	-13	+101	+3	+14	305	+1 007	+ 85	+90	+6	+13
246	1 116	12	101	3	14	306	1 001	86	90	6	13
247	1 118	10	101	3	14	307	996	88	90	6	13
248	1 119	8	100	3	14	308	990	89	90	6	13
249	1 121	7	100	4	14	309	984	91	90	6	13
250	+1 122	- 5	+100	+4	+14	310	+ 978	+ 92	+90	+6	+13
251	1 123	4	100	4	14	311	972	93	90	6	12
252	1 124	- 2	99	4	14	312	966	95	90	6	12
253	1 125	0	99	4	14	313	960	96	90	6	12
254	1 126	+ 2	99	4	14	314	954	97	90	6	12
255	+1 127	+ 3	+ 99	+4	+14	315	+ 947	+ 99	+90	+6	+12
256	1 128	5	98	4	14	316	941	100	90	6	12
257	1 128	6	98	4	14	317	934	101	90	6	12
258	1 129	8	98	4	14	318	927	103	90	6	12
259	1 129	10	98	4	14	319	921	104	90	6	12
260	+1 129	+11	+ 97	+4	+14	320	+ 914	+105	+90	+6	+11
261	1 129	13	97	4	14	321	907	106	90	6	11
262	1 129	15	97	4	14	322	900	108	90	6	11
263	1 128	16	97	4	14	323	892	109	90	6	11
264	1 128	18	96	4	14	324	885	110	90	6	11
265	+1 128	+20	+ 96	+4	+14	325	+ 878	+111	+90	+6	+11
266	1 127	21	96	4	14	326	870	112	90	6	11
267	1 126	23	96	4	14	327	863	114	90	6	11
268	1 125	25	95	5	14	328	855	115	90	7	11
269	1 124	26	95	5	14	329	847	116	89	7	10
270	+1 123	+28	+ 95	+5	+14	330	+ 839	+117	+89	+7	+10
271	1 122	30	95	5	14	331	831	118	89	7	10
272	1 121	31	95	5	14	332	823	119	89	7	10
273	1 119	33	94	5	14	333	815	120	89	7	10
274	1 117	35	94	5	14	334	807	121	89	7	10
275	+1 115	+37	+ 94	+5	+14	335	+ 798	+122	+89	+7	+10
276	1 113	38	94	5	14	336	790	123	89	7	10
277	1 111	40	94	5	14	337	782	124	89	7	10
278	1 109	42	94	5	14	338	773	125	89	7	9
279	1 107	43	93	5	14	339	764	126	89	7	9
280	+1 105	+45	+ 93	+5	+14	340	+ 756	+127	+89	+7	+ 9
281	1 103	47	93	5	14	341	747	128	89	7	9
282	1 100	48	93	5	14	342	738	128	89	7	9
283	1 097	50	93	5	14	343	729	129	89	7	9
284	1 094	52	93	5	14	344	720	130	89	7	9
285	+1 091	+53	+ 93	+5	+14	345	+ 710	+131	+89	+7	+ 9
286	1 088	55	92	5	14	346	701	132	89	7	9
287	1 085	57	92	5	14	347	692	132	89	7	8
288	1 081	58	92	5	14	348	683	133	89	7	8
289	1 078	60	92	5	14	349	673	134	89	7	8
290	+1 074	+61	+ 92	+5	+14	350	+ 664	+135	+89	+7	+ 8
291	1 071	63	92	5	14	351	654	135	89	7	8
292	1 067	65	92	5	14	352	644	136	89	7	8
293	1 063	66	91	5	14	353	635	136	89	7	8
294	1 059	68	91	5	14	354	625	137	89	7	8
295	+1 055	+69	+ 91	+5	+14	355	+ 615	+137	+89	+7	+ 8
296	1 050	71	91	5	13	356	605	138	89	7	7
297	1 046	72	91	5	13	357	595	138	89	7	7
298	1 041	74	91	6	13	358	585	139	89	7	7
299	1 037	76	91	6	13	359	575	139	89	7	7
300	+1 032	+77	+ 91	+6	+13	360	+ 564	+140	+89	+8	+ 7

This table gives units of the seventh place of decimals.

TABLE XXV.—Arg. 3. *Action of Jupiter.*

Arg.	(ρ . c. o)	(ρ . s. 1)	(ρ . c. 1)	(ρ . s. 2)	(ρ . c. 2)	Arg.	(ρ . c. o)	(ρ . s. 1)	(ρ . c. 1)	(ρ . s. 2)	(ρ . c. 2)
360	+564	+140	+89	+8	+7	420	-115	+129	+73	+9	+2
361	554	140	89	8	7	421	127	128	73	9	2
362	544	141	89	8	7	422	138	127	72	9	2
363	533	141	89	8	6	423	150	126	72	9	2
364	523	142	89	8	6	424	162	126	71	9	2
365	+513	+142	+88	+8	+6	425	-173	+125	+71	+9	+1
366	502	142	88	8	6	426	185	124	70	9	1
367	492	142	88	8	6	427	196	123	70	9	1
368	481	143	88	8	6	428	208	122	69	9	1
369	470	143	88	8	6	429	219	121	68	9	1
370	+459	+143	+88	+8	+6	430	-231	+120	+68	+9	+1
371	449	144	88	8	6	431	242	120	67	9	1
372	438	144	88	8	6	432	254	119	66	9	1
373	427	144	88	8	5	433	265	118	66	9	1
374	416	144	88	8	5	434	276	117	65	9	1
375	+405	+144	+87	+8	+5	435	-288	+116	+64	+9	+1
376	394	144	87	8	5	436	299	115	64	9	1
377	383	144	87	8	5	437	310	114	63	9	1
378	372	144	87	8	5	438	322	114	62	9	1
379	360	144	87	8	5	439	333	113	62	9	1
380	+349	+144	+87	+8	+5	440	-344	+112	+61	+9	+1
381	338	144	87	8	5	441	355	111	60	9	1
382	327	144	86	9	4	442	366	110	59	9	1
383	316	144	86	9	4	443	377	109	59	9	1
384	304	144	86	9	4	444	388	108	58	9	1
385	+293	+144	+86	+9	+4	445	-399	+107	+57	+9	+1
386	282	144	86	9	4	446	410	106	56	9	1
387	270	144	85	9	4	447	421	105	56	9	1
388	259	144	85	9	4	448	432	104	55	9	1
389	247	143	85	9	4	449	443	103	54	9	1
390	+236	+143	+85	+9	+4	450	-453	+102	+53	+9	+1
391	224	143	84	9	4	451	464	101	52	9	1
392	212	143	84	9	4	452	475	100	52	9	1
393	201	142	84	9	3	453	485	99	51	9	1
394	189	142	84	9	3	454	496	98	50	8	1
395	+178	+142	+83	+9	+3	455	-506	+97	+49	+8	+1
396	166	142	83	9	3	456	517	96	48	8	0
397	155	141	83	9	3	457	527	95	48	8	0
398	143	141	83	9	3	458	537	94	47	8	0
399	131	141	82	9	3	459	548	93	46	8	0
400	+120	+140	+82	+9	+3	460	-558	+92	+45	+8	0
401	108	140	82	9	3	461	568	91	44	8	0
402	96	139	81	9	3	462	578	90	43	8	0
403	85	139	81	9	3	463	588	88	42	8	0
404	73	138	81	9	3	464	598	87	41	8	0
405	+61	+138	+80	+9	+3	465	-608	+86	+40	+8	0
406	49	137	80	9	2	466	618	85	40	8	0
407	38	137	80	9	2	467	627	84	39	8	0
408	26	136	79	9	2	468	637	83	38	8	0
409	14	136	79	9	2	469	647	82	37	8	0
410	+2	+135	+78	+9	+2	470	-656	+81	+36	+8	0
411	-10	135	78	9	2	471	666	80	35	7	0
412	21	134	77	9	2	472	675	79	34	7	0
413	33	133	77	9	2	473	684	78	33	7	0
414	45	133	76	9	2	474	694	77	32	7	0
415	-56	+132	+76	+9	+2	475	-703	+76	+31	+7	0
416	68	131	75	9	2	476	712	75	30	7	0
417	80	131	75	9	2	477	721	74	29	7	0
418	92	130	74	9	2	478	730	72	28	7	0
419	103	129	74	9	2	479	739	71	28	7	0
420	-115	+129	+73	+9	+2	480	-747	+70	+27	+7	0

This table gives units of the seventh place of decimals.

TABLE XXV.—Arg. 3. *Action of Jupiter.*

Arg.	(ρ . c. o)	(ρ . s. 1)	(ρ . c. 1)	(ρ . s. 2)	(ρ . c. 2)	Arg.	(ρ . c. o)	(ρ . s. 1)	(ρ . c. 1)	(ρ . s. 2)	(ρ . c. 2)
480	— 747	+70	+27	+7	0	540	— 1 096	+17	—24	+2	—2
481	756	69	26	7	0	541	1 099	16	24	1	2
482	765	68	25	6	0	542	1 101	16	25	1	2
483	773	67	24	6	0	543	1 103	15	25	1	2
484	782	66	23	6	0	544	1 105	14	26	1	2
485	— 790	+65	+22	+6	0	545	— 1 107	+14	—26	+1	—2
486	799	64	21	6	0	546	1 109	13	27	1	2
487	807	63	20	6	0	547	1 111	12	27	1	2
488	815	62	19	6	0	548	1 113	12	28	1	2
489	823	61	18	6	0	549	1 114	11	28	1	2
490	— 831	+60	+17	+6	0	550	— 1 115	+10	—29	+1	—2
491	838	59	16	6	0	551	1 116	10	29	1	2
492	846	58	15	6	0	552	1 117	9	30	1	2
493	854	57	14	5	0	553	1 118	8	30	1	2
494	861	56	13	5	0	554	1 119	8	30	1	2
495	— 869	+55	+12	+5	—1	555	— 1 120	+7	—30	+1	—2
496	876	54	11	5	1	556	1 121	7	31	0	2
497	884	53	10	5	1	557	1 122	6	31	0	2
498	891	52	9	5	1	558	1 122	5	31	0	3
499	898	51	8	5	1	559	1 122	5	31	0	3
500	— 905	+50	+7	+5	—1	560	— 1 122	+4	—32	0	—3
501	911	49	6	5	1	561	1 122	4	32	0	3
502	918	48	6	5	1	562	1 122	3	32	0	3
503	925	47	5	5	1	563	1 122	3	32	0	3
504	932	46	4	5	1	564	1 122	2	32	0	3
505	— 938	+45	+3	+5	—1	565	— 1 121	+2	—33	0	—3
506	945	45	2	5	1	566	1 121	1	33	0	3
507	951	44	+1	4	1	567	1 120	+1	33	0	3
508	957	43	0	4	1	568	1 119	0	33	0	3
509	963	42	—1	4	1	569	1 118	—1	33	0	3
510	— 969	+41	—1	+4	—1	570	— 1 117	—1	—33	0	—3
511	975	40	2	4	1	571	1 116	2	33	0	3
512	980	39	3	4	1	572	1 114	2	33	0	3
513	986	38	4	4	1	573	1 113	3	33	—1	3
514	992	37	5	4	1	574	1 111	3	33	1	3
515	— 997	+36	—6	+4	—1	575	— 1 110	—4	—33	—1	—3
516	1 003	36	7	3	1	576	1 108	4	33	1	3
517	1 008	35	8	3	1	577	1 106	5	33	1	3
518	1 013	34	8	3	1	578	1 104	5	33	1	3
519	1 018	33	9	3	1	579	1 102	6	33	1	3
520	— 1 023	+32	—10	+3	—2	580	— 1 100	—6	—33	—1	—3
521	1 027	31	11	3	2	581	1 097	7	33	1	3
522	1 032	30	12	3	2	582	1 095	7	33	1	3
523	1 037	30	12	3	2	583	1 092	8	33	1	3
524	1 041	29	13	3	2	584	1 089	8	32	1	3
525	— 1 045	+28	—14	+3	—2	585	— 1 086	—9	—32	—1	—3
526	1 050	27	15	3	2	586	1 083	9	32	1	3
527	1 054	26	15	3	2	587	1 080	10	32	1	3
528	1 058	26	16	3	2	588	1 076	10	31	1	3
529	1 062	25	17	2	2	589	1 073	11	31	1	3
530	— 1 065	+24	—18	+2	—2	590	— 1 070	—11	—31	—1	—3
531	1 069	23	18	2	2	591	1 066	12	31	1	2
532	1 072	23	19	2	2	592	1 063	12	30	1	2
533	1 076	22	19	2	2	593	1 059	12	30	2	2
534	1 079	21	20	2	2	594	1 055	13	30	2	2
535	— 1 082	+20	—21	+2	—2	595	— 1 051	—13	—29	—2	—2
536	1 085	20	21	2	2	596	1 047	14	29	2	2
537	1 088	19	22	2	2	597	1 043	14	28	2	2
538	1 091	18	22	2	2	598	1 038	15	28	2	2
539	1 094	18	23	2	2	599	1 034	15	27	2	2
540	— 1 096	+17	—24	+2	—2	600	— 1 029	—16	—27	—2	—2

This table gives units of the seventh place of decimals.

TABLE XXVI.—Arg. 8. *Action of Jupiter and Saturn.*

Arg.	(ρ, c, o)	(ρ, s, i)	(ρ, c, i)	Arg.	(ρ, c, o)	(ρ, s, i)	(ρ, c, i)	Arg.	(ρ, c, o)	(ρ, s, i)	(ρ, c, i)
0	-4	+2	-4	20	+6	-6	-1	40	-3	+4	+5
1	5	3	4	21	6	6	2	41	-1	3	5
2	6	4	3	22	6	6	3	42	0	+2	5
3	6	5	-2	23	5	6	4	43	+1	0	5
4	7	6	0	24	4	5	4	44	3	-1	5
5	-7	+7	+1	25	+3	-4	-5	45	+4	-2	+4
6	7	7	2	26	+2	3	5	46	5	4	3
7	6	7	3	27	0	-2	5	47	6	5	2
8	5	6	4	28	-1	0	5	48	7	6	+1
9	4	6	4	29	2	+1	4	49	7	6	0
10	-3	+5	+5	30	-4	+2	-4	50	+7	-7	-1
11	2	4	5	31	5	3	3	51	7	7	2
12	-1	2	5	32	6	4	2	52	6	7	3
13	+1	+1	5	33	6	5	-1	53	5	6	4
14	2	0	5	34	6	6	0	54	4	6	5
15	+3	-2	+4	35	-6	+6	+1	55	+3	-5	-5
16	4	3	3	36	6	6	2	56	+2	3	6
17	5	4	2	37	6	6	3	57	0	2	6
18	6	5	+1	38	5	6	4	58	-1	-1	5
19	6	6	0	39	4	5	5	59	2	+1	5
20	+6	-6	-1	40	-3	+4	+5	60	-4	+2	-4

This table gives units of the seventh place of decimals.

TABLE XXVII.—Arg. 12. *Action of Jupiter and Saturn*

Arg.	(ρ, c, o)	Arg.	(ρ, c, o)	Arg.	(ρ, c, o)	Arg.	(ρ, c, o)
0	0	15	+3	30	0	45	-3
1	0	16	3	31	0	46	3
2	+1	17	3	32	-1	47	3
3	1	18	3	33	1	48	3
4	1	19	3	34	1	49	3
5	+2	20	+3	35	-2	50	-3
6	2	21	2	36	2	51	2
7	2	22	2	37	2	52	2
8	2	23	2	38	2	53	2
9	3	24	2	39	3	54	2
10	+3	25	+2	40	-3	55	-2
11	3	26	1	41	3	56	1
12	3	27	1	42	3	57	1
13	3	28	+1	43	3	58	-1
14	3	29	0	44	3	59	0
15	+3	30	0	45	-3	60	0

This table gives units of the seventh place of decimals.

TABLE XXVIII.—Arg. 13. *Action of Jupiter and Saturn.*

Arg.	(ρ . c. o)	(ρ . s. 1)	(ρ . c. 1)	Arg.	(ρ . c. o)	(ρ . s. 1)	(ρ . c. 1)	Arg.	(ρ . c. o)	(ρ . s. 1)	(ρ . c. 1)
0	0	-3	+2	20	-1	+3	0	40	+1	0	-2
1	0	3	2	21	0	3	-1	41	1	0	2
2	0	2	2	22	0	3	1	42	1	-1	2
3	0	2	2	23	0	3	1	43	1	1	1
4	0	2	2	24	0	3	1	44	1	2	1
5	0	-2	+2	25	0	+3	-2	45	+1	-2	-1
6	-1	1	2	26	0	3	2	46	1	2	-1
7	1	1	2	27	0	3	2	47	1	2	0
8	1	-1	2	28	0	3	2	48	1	3	0
9	1	0	2	29	0	3	2	49	1	3	0
10	-1	0	+2	30	0	+3	-2	50	+1	-3	0
11	1	0	2	31	0	3	2	51	0	3	+1
12	1	+1	2	32	0	2	2	52	0	3	1
13	1	1	1	33	0	2	2	53	0	3	1
14	1	2	1	34	0	2	2	54	0	3	1
15	-1	+2	+1	35	0	+2	-2	55	0	-3	+2
16	1	2	+1	36	+1	1	2	56	0	3	2
17	1	2	0	37	1	1	2	57	0	3	2
18	1	3	0	38	1	+1	2	58	0	3	2
19	1	3	0	39	1	0	2	59	0	3	2
20	-1	+3	0	40	+1	0	-2	60	0	-3	+2

This table gives units of the seventh place of decimals.

TABLE XXIX.—Arg. 14. *Action of Jupiter and Saturn.*

Arg.	(ρ . c. o)	Arg.	(ρ . c. o)	Arg.	(ρ . c. o)	Arg.	(ρ . c. o)
0	+2	15	+2	30	-2	45	-2
1	3	16	2	31	3	46	2
2	3	17	2	32	3	47	2
3	3	18	1	33	3	48	1
4	3	19	1	34	3	49	1
5	+3	20	+1	35	-3	50	-1
6	3	21	0	36	3	51	0
7	3	22	0	37	3	52	0
8	3	23	0	38	3	53	0
9	3	24	-1	39	3	54	+1
10	+3	25	-1	40	-3	55	+1
11	3	26	1	41	3	56	1
12	3	27	2	42	3	57	2
13	3	28	2	43	3	58	2
14	3	29	2	44	3	59	2
15	+2	30	-2	45	-2	60	+2

This table gives units of the seventh place of decimals.

TABLE XXX.—Arg. g . Principal term of log radius vector.

g	$\log r$		g	$\log r$		g	$\log r$	
0 0	I. 262 169 5	1	10 0	I. 262 527 7	120	20 0	I. 263 586 4	234
10	169 6	3	10 10	539 7	122	20 10	609 8	235
20	169 9	4	10 20	551 9	124	20 20	633 3	237
30	170 4	5	10 30	564 3	126	20 30	657 0	239
40	171 1	7	10 40	576 9	127	20 40	680 9	241
50	172 0	9	10 50	589 6	130	20 50	705 0	243
1 0	I. 262 173 1	11	11 0	I. 262 602 6	132	21 0	I. 263 729 3	244
10	174 4	13	11 10	615 8	133	21 10	753 7	246
20	175 9	15	11 20	629 1	136	21 20	778 3	248
30	177 6	17	11 30	642 7	137	21 30	803 1	250
40	179 5	19	11 40	656 4	139	21 40	828 1	252
50	181 6	21	11 50	670 3	142	21 50	853 3	253
2 0	I. 262 183 9	23	12 0	I. 262 684 5	143	22 0	I. 263 878 6	255
10	186 4	25	12 10	698 8	145	22 10	904 1	257
20	189 1	27	12 20	713 3	147	22 20	929 8	259
30	192 0	29	12 30	728 0	149	22 30	955 7	261
40	195 0	30	12 40	742 9	151	22 40	I. 263 981 8	262
50	198 3	33	12 50	758 0	153	22 50	I. 264 008 0	264
3 0	I. 262 201 8	35	13 0	I. 262 773 3	155	23 0	I. 264 034 4	266
10	205 5	37	13 10	788 8	157	23 10	061 0	267
20	209 4	39	13 20	804 5	159	23 20	087 7	269
30	213 5	41	13 30	820 4	160	23 30	114 6	271
40	217 8	43	13 40	836 4	162	23 40	141 7	273
50	222 3	45	13 50	852 6	165	23 50	169 0	275
4 0	I. 262 227 0	47	14 0	I. 262 869 1	166	24 0	I. 264 196 5	277
10	231 9	49	14 10	885 7	168	24 10	224 2	278
20	237 0	51	14 20	902 5	171	24 20	252 0	280
30	242 2	52	14 30	919 6	172	24 30	280 0	282
40	247 7	55	14 40	936 8	173	24 40	308 2	283
50	253 4	57	14 50	954 1	176	24 50	336 5	285
5 0	I. 262 259 3	59	15 0	I. 262 971 7	178	25 0	I. 264 365 0	287
10	265 4	61	15 10	I. 262 989 5	180	25 10	393 7	288
20	271 7	63	15 20	I. 263 007 5	181	25 20	422 5	290
30	278 1	64	15 30	025 6	184	25 30	451 5	292
40	284 8	67	15 40	044 0	185	25 40	480 7	294
50	291 7	69	15 50	062 5	187	25 50	510 1	295
6 0	I. 262 298 8	71	16 0	I. 263 081 2	189	26 0	I. 264 539 6	297
10	306 0	72	16 10	100 1	191	26 10	569 3	299
20	313 5	75	16 20	119 2	192	26 20	599 2	300
30	321 2	77	16 30	138 5	193	26 30	629 2	302
40	329 0	78	16 40	158 0	195	26 40	659 4	304
50	337 1	81	16 50	177 6	196	26 50	689 8	306
7 0	I. 262 345 3	82	17 0	I. 263 197 5	199	27 0	I. 264 720 4	307
10	353 8	85	17 10	217 5	200	27 10	751 1	309
20	362 4	86	17 20	237 7	202	27 20	782 0	311
30	371 3	89	17 30	258 1	204	27 30	813 1	312
40	380 4	91	17 40	278 7	206	27 40	844 3	314
50	389 6	92	17 50	299 5	208	27 50	875 7	316
8 0	I. 262 399 1	95	18 0	I. 263 320 4	209	28 0	I. 264 907 3	317
10	408 7	96	18 10	341 6	212	28 10	939 0	319
20	418 5	98	18 20	362 9	213	28 20	I. 264 970 9	321
30	428 6	101	18 30	384 4	215	28 30	I. 265 003 0	322
40	438 8	102	18 40	406 1	217	28 40	035 2	324
50	449 2	104	18 50	428 0	219	28 50	067 6	325
9 0	I. 262 459 8	106	19 0	I. 263 450 1	221	29 0	I. 265 100 1	327
10	470 7	109	19 10	472 4	223	29 10	132 8	329
20	481 7	110	19 20	494 8	224	29 20	165 7	331
30	492 9	112	19 30	517 4	226	29 30	198 8	332
40	504 3	114	19 40	540 2	228	29 40	232 0	334
50	515 9	116	19 50	563 2	230	29 50	265 4	335
10 0	I. 262 527 7	118	20 0	I. 263 586 4	232	30 0	I. 265 298 9	336
	$\log r$	g		$\log r$	g		$\log r$	g

TABLE XXX.—Arg. *g*. Principal term of log radius vector.

<i>g</i>	log <i>r</i>		<i>g</i>	log <i>r</i>		<i>g</i>	log <i>r</i>	
° /		/ °	° /		/ °	° /		/ °
30 °	I. 265 298 9 ³³⁷	° 330	40 °	I. 267 591 5 ⁴²⁶	° 320	50 °	I. 270 369 4 ⁴⁹⁸	° 310
10	332 6 ³³⁸	50	10	634 1 ⁴²⁸	50	10	419 2 ⁴⁹⁹	50
20	366 4 ³⁴⁰	40	20	676 9 ⁴²⁹	40	20	469 1 ⁵⁰⁰	40
30	400 4 ³⁴²	30	30	719 8 ⁴³⁰	30	30	519 1 ⁵⁰¹	30
40	434 6 ³⁴⁴	20	40	762 8 ⁴³¹	20	40	569 2 ⁵⁰²	20
50	469 0 ³⁴⁵	10	50	805 9 ⁴³³	10	50	619 4 ⁵⁰³	10
31 °	I. 265 503 5 ³⁴⁶	° 329	41 °	I. 267 849 2 ⁴³⁴	° 319	51 °	I. 270 669 7 ⁵⁰⁴	° 309
10	538 1 ³⁴⁸	50	10	892 6 ⁴³⁵	50	10	720 1 ⁵⁰⁵	50
20	572 9 ³⁵⁰	40	20	936 1 ⁴³⁷	40	20	770 6 ⁵⁰⁷	40
30	607 9 ³⁵²	30	30	I. 267 979 8 ⁴³⁸	30	30	821 3 ⁵⁰⁷	30
40	643 1 ³⁵³	20	40	I. 268 023 6 ⁴⁴⁰	20	40	872 0 ⁵⁰⁸	20
50	678 4 ³⁵⁴	10	50	067 6 ⁴⁴⁰	10	50	922 8 ⁵⁰⁹	10
32 °	I. 265 713 8 ³⁵⁶	° 328	42 °	I. 268 111 6 ⁴⁴²	° 318	52 °	I. 270 973 7 ⁵¹⁰	° 308
10	749 4 ³⁵⁷	50	10	155 8 ⁴⁴³	50	10	I. 271 024 7 ⁵¹¹	50
20	785 1 ³⁵⁹	40	20	200 1 ⁴⁴⁵	40	20	075 8 ⁵¹²	40
30	821 0 ³⁶¹	30	30	244 6 ⁴⁴⁶	30	30	127 0 ⁵¹³	30
40	857 1 ³⁶²	20	40	289 2 ⁴⁴⁷	20	40	178 3 ⁵¹⁴	20
50	893 3 ³⁶⁴	10	50	333 9 ⁴⁴⁸	10	50	229 7 ⁵¹⁵	10
33 °	I. 265 929 7 ³⁶⁶	° 327	43 °	I. 268 378 7 ⁴⁵⁰	° 317	53 °	I. 271 281 2 ⁵¹⁶	° 307
10	I. 265 966 3 ³⁶⁷	50	10	423 7 ⁴⁵¹	50	10	332 8 ⁵¹⁷	50
20	I. 266 003 0 ³⁶⁸	40	20	468 8 ⁴⁵²	40	20	384 5 ⁵¹⁸	40
30	039 8 ³⁷⁰	30	30	514 0 ⁴⁵³	30	30	436 3 ⁵¹⁸	30
40	076 8 ³⁷¹	20	40	559 3 ⁴⁵⁴	20	40	488 1 ⁵²⁰	20
50	113 9 ³⁷³	10	50	604 7 ⁴⁵⁶	10	50	540 1 ⁵²¹	10
34 °	I. 266 151 2 ³⁷⁵	° 326	44 °	I. 268 650 3 ⁴⁵⁷	° 316	54 °	I. 271 592 2 ⁵²¹	° 306
10	188 7 ³⁷⁶	50	10	696 0 ⁴⁵⁹	50	10	644 3 ⁵²²	50
20	226 3 ³⁷⁷	40	20	741 9 ⁴⁵⁹	40	20	696 5 ⁵²³	40
30	264 0 ³⁷⁹	30	30	787 8 ⁴⁶¹	30	30	748 8 ⁵²⁵	30
40	301 9 ³⁸¹	20	40	833 9 ⁴⁶²	20	40	801 3 ⁵²⁵	20
50	340 0 ³⁸²	10	50	880 1 ⁴⁶³	10	50	853 8 ⁵²⁶	10
35 °	I. 266 378 2 ³⁸⁴	° 325	45 °	I. 268 926 4 ⁴⁶⁴	° 315	55 °	I. 271 906 4 ⁵²⁶	° 305
10	416 6 ³⁸⁵	50	10	I. 268 972 8 ⁴⁶⁶	50	10	I. 271 959 0 ⁵²⁸	50
20	455 1 ³⁸⁶	40	20	I. 269 019 4 ⁴⁶⁷	40	20	I. 272 011 8 ⁵²⁹	40
30	493 7 ³⁸⁸	30	30	066 1 ⁴⁶⁸	30	30	064 7 ⁵³⁰	30
40	532 5 ³⁸⁹	20	40	112 9 ⁴⁶⁹	20	40	117 7 ⁵³¹	20
50	571 4 ³⁹¹	10	50	159 8 ⁴⁷⁰	10	50	170 7 ⁵³¹	10
36 °	I. 266 610 5 ³⁹³	° 324	46 °	I. 269 206 8 ⁴⁷¹	° 314	56 °	I. 272 223 8 ⁵³²	° 304
10	649 8 ³⁹⁴	50	10	253 9 ⁴⁷³	50	10	277 0 ⁵³³	50
20	689 2 ³⁹⁵	40	20	301 2 ⁴⁷⁴	40	20	330 3 ⁵³⁴	40
30	728 7 ³⁹⁷	30	30	348 6 ⁴⁷⁵	30	30	383 7 ⁵³⁴	30
40	768 4 ³⁹⁸	20	40	396 1 ⁴⁷⁶	20	40	437 1 ⁵³⁵	20
50	808 2 ³⁹⁹	10	50	443 7 ⁴⁷⁷	10	50	490 6 ⁵³⁶	10
37 °	I. 266 848 1 ⁴⁰¹	° 323	47 °	I. 269 491 4 ⁴⁷⁸	° 313	57 °	I. 272 544 2 ⁵³⁷	° 303
10	888 2 ⁴⁰³	50	10	539 2 ⁴⁸⁰	50	10	597 9 ⁵³⁸	50
20	928 5 ⁴⁰⁴	40	20	587 2 ⁴⁸⁰	40	20	651 7 ⁵³⁹	40
30	I. 266 968 9 ⁴⁰⁵	30	30	635 2 ⁴⁸²	30	30	705 6 ⁵³⁹	30
40	I. 267 009 4 ⁴⁰⁷	20	40	683 4 ⁴⁸³	20	40	759 5 ⁵⁴⁰	20
50	050 1 ⁴⁰⁸	10	50	731 7 ⁴⁸⁴	10	50	813 5 ⁵⁴¹	10
38 °	I. 267 090 9 ⁴¹⁰	° 322	48 °	I. 269 780 1 ⁴⁸⁵	° 312	58 °	I. 272 867 6 ⁵⁴²	° 302
10	131 9 ⁴¹¹	50	10	828 6 ⁴⁸⁶	50	10	921 8 ⁵⁴³	50
20	173 0 ⁴¹²	40	20	877 2 ⁴⁸⁸	40	20	I. 272 976 1 ⁵⁴³	40
30	214 2 ⁴¹⁴	30	30	926 0 ⁴⁸⁹	30	30	I. 273 030 4 ⁵⁴⁴	30
40	255 6 ⁴¹⁵	20	40	I. 269 974 8 ⁴⁹¹	20	40	084 8 ⁵⁴⁵	20
50	297 1 ⁴¹⁶	10	50	I. 270 023 7 ⁴⁹²	10	50	139 3 ⁵⁴⁶	10
39 °	I. 267 338 7 ⁴¹⁸	° 321	49 °	I. 270 072 8 ⁴⁹²	° 311	59 °	I. 273 193 9 ⁵⁴⁶	° 301
10	380 5 ⁴¹⁹	50	10	122 0 ⁴⁹²	50	10	248 5 ⁵⁴⁷	50
20	422 4 ⁴²¹	40	20	171 2 ⁴⁹⁴	40	20	303 2 ⁵⁴⁸	40
30	464 5 ⁴²²	30	30	220 6 ⁴⁹⁵	30	30	358 0 ⁵⁴⁸	30
40	506 7 ⁴²⁴	20	40	270 1 ⁴⁹⁶	20	40	412 8 ⁵⁴⁹	20
50	549 1 ⁴²⁴	10	50	319 7 ⁴⁹⁷	10	50	467 7 ⁵⁵⁰	10
40 °	I. 267 591 5 ⁴²⁶	° 320	50 °	I. 270 369 4 ⁴⁹⁸	° 310	60 °	I. 273 522 7 ⁵⁵⁰	° 300
	log <i>r</i>	<i>g</i>		log <i>r</i>	<i>g</i>		log <i>r</i>	<i>g</i>

TABLE XXX.—Arg. *g*. Principal term of log radius vector.

<i>g</i>	log <i>r</i>		<i>g</i>	log <i>r</i>		<i>g</i>	log <i>r</i>	
0 /		/ 0	0 /		/ 0	0 /		/ 0
60 0	I. 273 522 7 ⁵⁵¹	0 300	70 0	I. 276 933 9 ⁵⁸⁴	0 290	80 0	I. 280 483 5 ⁵⁹⁶	0 280
10	577 8 ⁵⁵²	50	10	I. 276 992 3 ⁵⁸⁴	50	10	543 1 ⁵⁹⁷	50
20	633 0 ⁵⁵²	40	20	I. 277 050 7 ⁵⁸⁴	40	20	602 8 ⁵⁹⁷	40
30	688 2 ⁵⁵³	30	30	109 1 ⁵⁸⁵	30	30	662 5 ⁵⁹⁷	30
40	743 5 ⁵⁵³	20	40	167 6 ⁵⁸⁵	20	40	722 1 ⁵⁹⁶	20
50	798 8 ⁵⁵⁴	10	50	226 1 ⁵⁸⁵	10	50	781 8 ⁵⁹⁷	10
61 0	I. 273 854 2 ⁵⁵⁵	0 299	71 0	I. 277 284 6 ⁵⁸⁶	0 289	81 0	I. 280 841 5 ⁵⁹⁷	0 279
10	909 7 ⁵⁵⁶	50	10	343 2 ⁵⁸⁶	50	10	901 2 ⁵⁹⁷	50
20	I. 273 965 3 ⁵⁵⁶	40	20	401 8 ⁵⁸⁶	40	20	I. 280 960 9 ⁵⁹⁷	40
30	I. 274 020 9 ⁵⁵⁷	30	30	460 4 ⁵⁸⁷	30	30	I. 281 020 6 ⁵⁹⁷	30
40	076 6 ⁵⁵⁸	20	40	519 1 ⁵⁸⁷	20	40	080 3 ⁵⁹⁷	20
50	132 4 ⁵⁵⁸	10	50	577 8 ⁵⁸⁷	10	50	140 0 ⁵⁹⁷	10
62 0	I. 274 188 2 ⁵⁵⁹	0 298	72 0	I. 277 636 5 ⁵⁸⁸	0 288	82 0	I. 281 199 7 ⁵⁹⁷	0 278
10	244 1 ⁵⁵⁹	50	10	695 3 ⁵⁸⁸	50	10	259 4 ⁵⁹⁷	50
20	300 0 ⁵⁶⁰	40	20	754 1 ⁵⁸⁸	40	20	319 1 ⁵⁹⁷	40
30	356 0 ⁵⁶¹	30	30	812 9 ⁵⁸⁹	30	30	378 8 ⁵⁹⁶	30
40	412 1 ⁵⁶²	20	40	871 8 ⁵⁸⁹	20	40	438 4 ⁵⁹⁷	20
50	468 3 ⁵⁶²	10	50	930 7 ⁵⁸⁹	10	50	498 1 ⁵⁹⁷	10
63 0	I. 274 524 5 ⁵⁶³	0 297	73 0	I. 277 989 6 ⁵⁸⁹	0 287	83 0	I. 281 557 8 ⁵⁹⁷	0 277
10	580 8 ⁵⁶³	50	10	I. 278 048 5 ⁵⁹⁰	50	10	617 5 ⁵⁹⁷	50
20	637 1 ⁵⁶⁴	40	20	107 5 ⁵⁹¹	40	20	677 2 ⁵⁹⁷	40
30	693 5 ⁵⁶⁴	30	30	166 6 ⁵⁹¹	30	30	736 9 ⁵⁹⁶	30
40	749 9 ⁵⁶⁵	20	40	225 6 ⁵⁹¹	20	40	796 5 ⁵⁹⁷	20
50	806 4 ⁵⁶⁶	10	50	284 7 ⁵⁹¹	10	50	856 2 ⁵⁹⁷	10
64 0	I. 274 863 0 ⁵⁶⁶	0 296	74 0	I. 278 343 8 ⁵⁹¹	0 286	84 0	I. 281 915 9 ⁵⁹⁶	0 276
10	919 6 ⁵⁶⁷	50	10	402 9 ⁵⁹¹	50	10	I. 281 975 5 ⁵⁹⁷	50
20	I. 274 976 3 ⁵⁶⁷	40	20	462 0 ⁵⁹²	40	20	I. 282 035 2 ⁵⁹⁶	40
30	I. 275 033 0 ⁵⁶⁸	30	30	521 2 ⁵⁹²	30	30	094 8 ⁵⁹⁶	30
40	089 8 ⁵⁶⁹	20	40	580 3 ⁵⁹²	20	40	154 4 ⁵⁹⁶	20
50	146 7 ⁵⁶⁹	10	50	639 5 ⁵⁹³	10	50	214 0 ⁵⁹⁷	10
65 0	I. 275 203 6 ⁵⁶⁹	0 295	75 0	I. 278 698 8 ⁵⁹²	0 285	85 0	I. 282 273 7 ⁵⁹⁶	0 275
10	260 5 ⁵⁷⁰	50	10	758 0 ⁵⁹³	50	10	333 3 ⁵⁹⁵	50
20	317 5 ⁵⁷¹	40	20	817 3 ⁵⁹³	40	20	392 8 ⁵⁹⁶	40
30	374 6 ⁵⁷²	30	30	876 6 ⁵⁹³	30	30	452 4 ⁵⁹⁶	30
40	431 8 ⁵⁷²	20	40	935 9 ⁵⁹³	20	40	512 0 ⁵⁹⁶	20
50	489 0 ⁵⁷²	10	50	I. 278 995 2 ⁵⁹⁴	10	50	571 6 ⁵⁹⁵	10
66 0	I. 275 546 2 ⁵⁷³	0 294	76 0	I. 279 054 6 ⁵⁹³	0 284	86 0	I. 282 631 1 ⁵⁹⁶	0 274
10	603 5 ⁵⁷³	50	10	113 9 ⁵⁹⁴	50	10	690 7 ⁵⁹⁵	50
20	660 8 ⁵⁷⁴	40	20	173 3 ⁵⁹⁵	40	20	750 2 ⁵⁹⁵	40
30	718 2 ⁵⁷⁴	30	30	232 8 ⁵⁹⁵	30	30	809 7 ⁵⁹⁵	30
40	775 6 ⁵⁷⁵	20	40	292 2 ⁵⁹⁴	20	40	869 2 ⁵⁹⁵	20
50	833 1 ⁵⁷⁵	10	50	351 6 ⁵⁹⁵	10	50	928 7 ⁵⁹⁵	10
67 0	I. 275 890 6 ⁵⁷⁶	0 293	77 0	I. 279 411 1 ⁵⁹⁵	0 283	87 0	I. 282 988 2 ⁵⁹⁴	0 273
10	I. 275 948 2 ⁵⁷⁶	50	10	470 6 ⁵⁹⁴	50	10	I. 283 047 6 ⁵⁹⁴	50
20	I. 276 005 8 ⁵⁷⁷	40	20	530 0 ⁵⁹⁵	40	20	107 0 ⁵⁹⁵	40
30	063 5 ⁵⁷⁷	30	30	589 5 ⁵⁹⁶	30	30	166 5 ⁵⁹⁴	30
40	121 2 ⁵⁷⁸	20	40	649 1 ⁵⁹⁵	20	40	225 9 ⁵⁹⁴	20
50	179 0 ⁵⁷⁸	10	50	708 6 ⁵⁹⁵	10	50	285 3 ⁵⁹³	10
68 0	I. 276 236 8 ⁵⁷⁹	0 292	78 0	I. 279 768 1 ⁵⁹⁶	0 282	88 0	I. 283 344 6 ⁵⁹⁴	0 272
10	294 7 ⁵⁷⁹	50	10	827 7 ⁵⁹⁶	50	10	404 0 ⁵⁹³	50
20	352 6 ⁵⁷⁹	40	20	887 3 ⁵⁹⁵	40	20	463 3 ⁵⁹³	40
30	410 5 ⁵⁸⁰	30	30	I. 279 946 8 ⁵⁹⁶	30	30	522 6 ⁵⁹³	30
40	468 5 ⁵⁸⁰	20	40	I. 280 006 4 ⁵⁹⁶	20	40	581 9 ⁵⁹³	20
50	526 5 ⁵⁸¹	10	50	066 0 ⁵⁹⁶	10	50	641 2 ⁵⁹²	10
69 0	I. 276 584 6 ⁵⁸¹	0 291	79 0	I. 280 125 6 ⁵⁹⁷	0 281	89 0	I. 283 700 4 ⁵⁹²	0 271
10	642 7 ⁵⁸²	50	10	185 3 ⁵⁹⁶	50	10	759 6 ⁵⁹²	50
20	700 9 ⁵⁸²	40	20	244 9 ⁵⁹⁶	40	20	818 8 ⁵⁹²	40
30	759 1 ⁵⁸²	30	30	304 5 ⁵⁹⁷	30	30	878 0 ⁵⁹²	30
40	817 3 ⁵⁸³	20	40	364 2 ⁵⁹⁶	20	40	937 2 ⁵⁹²	20
50	875 6 ⁵⁸³	10	50	423 8 ⁵⁹⁷	10	50	I. 283 996 4 ⁵⁹¹	10
70 0	I. 276 933 9	0 290	80 0	I. 280 483 5	0 280	90 0	I. 284 055 5	0 270
	log <i>r</i>	<i>g</i>		log <i>r</i>	<i>g</i>		log <i>r</i>	<i>g</i>

TABLE XXX.—Arg. *g*. Principal term of log radius vector.

<i>g</i>	log <i>r</i>		<i>g</i>	log <i>r</i>		<i>g</i>	log <i>r</i>	
° /		/ °	° /		/ °	° /		/ °
90 0	I. 284 055 5 ⁵⁹¹	0 270	100 0	I. 287 541 4 ⁵⁶⁸	0 260	110 0	I. 290 842 8 ⁵³⁰	0 250
10	114 6 ⁵⁹⁰	50	10	598 2 ⁵⁶⁷	50	10	895 8 ⁵²⁸	50
20	173 6 ⁵⁹¹	40	20	654 9 ⁵⁶⁷	40	20	I. 290 948 6 ⁵²⁸	40
30	232 7 ⁵⁹⁰	30	30	711 6 ⁵⁶⁶	30	30	I. 291 001 4 ⁵²⁷	30
40	291 7 ⁵⁹⁰	20	40	768 2 ⁵⁶⁶	20	40	054 1 ⁵²⁶	20
50	350 7 ⁵⁹⁰	10	50	824 8 ⁵⁶⁶	10	50	106 7 ⁵²⁶	10
91 0	I. 284 409 7 ⁵⁸⁹	0 269	101 0	I. 287 881 4 ⁵⁶⁵	0 259	111 0	I. 291 159 3 ⁵²⁵	0 249
10	468 6 ⁵⁸⁹	50	10	937 9 ⁵⁶⁴	50	10	211 8 ⁵²⁴	50
20	527 5 ⁵⁸⁹	40	20	I. 287 994 3 ⁵⁶³	40	20	264 2 ⁵²³	40
30	586 4 ⁵⁸⁸	30	30	I. 288 050 6 ⁵⁶³	30	30	316 5 ⁵²³	30
40	645 2 ⁵⁸⁸	20	40	106 9 ⁵⁶³	20	40	368 8 ⁵²²	20
50	704 0 ⁵⁸⁸	10	50	163 2 ⁵⁶²	10	50	421 0 ⁵²¹	10
92 0	I. 284 762 8 ⁵⁸⁸	0 268	102 0	I. 288 219 4 ⁵⁶¹	0 258	112 0	I. 291 473 1 ⁵²⁰	0 248
10	821 6 ⁵⁸⁷	50	10	275 5 ⁵⁶¹	50	10	525 1 ⁵¹⁹	50
20	880 3 ⁵⁸⁷	40	20	331 6 ⁵⁶⁰	40	20	577 0 ⁵¹⁸	40
30	939 0 ⁵⁸⁷	30	30	387 6 ⁵⁶⁰	30	30	628 8 ⁵¹⁸	30
40	I. 284 997 7 ⁵⁸⁷	20	40	443 6 ⁵⁵⁹	20	40	680 6 ⁵¹⁷	20
50	I. 285 056 4 ⁵⁸⁶	10	50	499 5 ⁵⁵⁸	10	50	732 3 ⁵¹⁶	10
93 0	I. 285 115 0 ⁵⁸⁶	0 267	103 0	I. 288 555 3 ⁵⁵⁸	0 257	113 0	I. 291 783 9 ⁵¹⁵	0 247
10	173 6 ⁵⁸⁵	50	10	611 1 ⁵⁵⁸	50	10	835 4 ⁵¹⁵	50
20	232 1 ⁵⁸⁵	40	20	666 9 ⁵⁵⁷	40	20	886 9 ⁵¹⁴	40
30	290 6 ⁵⁸⁵	30	30	722 6 ⁵⁵⁶	30	30	938 3 ⁵¹³	30
40	349 1 ⁵⁸⁴	20	40	778 2 ⁵⁵⁵	20	40	I. 291 989 6 ⁵¹²	20
50	407 5 ⁵⁸⁴	10	50	833 7 ⁵⁵⁵	10	50	I. 292 040 8 ⁵¹¹	10
94 0	I. 285 465 9 ⁵⁸⁴	0 266	104 0	I. 288 889 2 ⁵⁵⁴	0 256	114 0	I. 292 091 9 ⁵¹⁰	0 246
10	524 3 ⁵⁸³	50	10	I. 288 944 6 ⁵⁵⁴	50	10	142 9 ⁵⁰⁹	50
20	582 6 ⁵⁸³	40	20	I. 289 000 0 ⁵⁵³	40	20	193 8 ⁵⁰⁹	40
30	640 9 ⁵⁸³	30	30	055 3 ⁵⁵²	30	30	244 7 ⁵⁰⁸	30
40	699 2 ⁵⁸²	20	40	110 5 ⁵⁵²	20	40	295 5 ⁵⁰⁶	20
50	757 4 ⁵⁸²	10	50	165 7 ⁵⁵¹	10	50	346 1 ⁵⁰⁶	10
95 0	I. 285 815 6 ⁵⁸¹	0 265	105 0	I. 289 220 8 ⁵⁵¹	0 255	115 0	I. 292 396 7 ⁵⁰⁶	0 245
10	873 7 ⁵⁸¹	50	10	275 9 ⁵⁵⁰	50	10	447 3 ⁵⁰⁴	50
20	931 8 ⁵⁸¹	40	20	330 9 ⁵⁴⁹	40	20	497 7 ⁵⁰³	40
30	I. 285 989 9 ⁵⁸¹	30	30	385 8 ⁵⁴⁹	30	30	548 0 ⁵⁰²	30
40	I. 286 048 0 ⁵⁸⁰	20	40	440 7 ⁵⁴⁸	20	40	598 2 ⁵⁰²	20
50	106 0 ⁵⁷⁹	10	50	495 5 ⁵⁴⁷	10	50	648 4 ⁵⁰¹	10
96 0	I. 286 163 9 ⁵⁷⁹	0 264	106 0	I. 289 550 2 ⁵⁴⁶	0 254	116 0	I. 292 698 5 ⁵⁰⁰	0 244
10	221 8 ⁵⁷⁹	50	10	604 8 ⁵⁴⁶	50	10	748 5 ⁴⁹⁹	50
20	279 7 ⁵⁷⁸	40	20	659 4 ⁵⁴⁵	40	20	798 4 ⁴⁹⁸	40
30	337 5 ⁵⁷⁸	30	30	713 9 ⁵⁴⁵	30	30	848 2 ⁴⁹⁷	30
40	395 3 ⁵⁷⁷	20	40	768 4 ⁵⁴⁴	20	40	897 9 ⁴⁹⁶	20
50	453 0 ⁵⁷⁷	10	50	822 8 ⁵⁴³	10	50	947 5 ⁴⁹⁶	10
97 0	I. 286 510 7 ⁵⁷⁷	0 263	107 0	I. 289 877 1 ⁵⁴³	0 253	117 0	I. 292 997 1 ⁴⁹⁵	0 243
10	568 4 ⁵⁷⁶	50	10	931 4 ⁵⁴²	50	10	I. 293 046 6 ⁴⁹³	50
20	626 0 ⁵⁷⁶	40	20	I. 289 985 6 ⁵⁴¹	40	20	095 9 ⁴⁹²	40
30	683 6 ⁵⁷⁵	30	30	I. 290 039 7 ⁵⁴⁰	30	30	145 1 ⁴⁹²	30
40	741 1 ⁵⁷⁴	20	40	093 7 ⁵⁴⁰	20	40	194 3 ⁴⁹¹	20
50	798 5 ⁵⁷⁴	10	50	147 7 ⁵³⁹	10	50	243 4 ⁴⁹⁰	10
98 0	I. 286 856 0 ⁵⁷⁴	0 262	108 0	I. 290 201 6 ⁵³⁸	0 252	118 0	I. 293 292 4 ⁴⁸⁹	0 242
10	913 4 ⁵⁷³	50	10	255 4 ⁵³⁸	50	10	341 3 ⁴⁸⁸	50
20	I. 286 970 7 ⁵⁷³	40	20	309 2 ⁵³⁷	40	20	390 1 ⁴⁸⁷	40
30	I. 287 028 0 ⁵⁷²	30	30	362 9 ⁵³⁶	30	30	438 8 ⁴⁸⁷	30
40	085 2 ⁵⁷²	20	40	416 5 ⁵³⁵	20	40	487 5 ⁴⁸⁶	20
50	142 4 ⁵⁷²	10	50	470 0 ⁵³⁵	10	50	536 0 ⁴⁸⁴	10
99 0	I. 287 199 6 ⁵⁷¹	0 261	109 0	I. 290 523 5 ⁵³⁴	0 251	119 0	I. 293 584 4 ⁴⁸⁴	0 241
10	256 7 ⁵⁷⁰	50	10	576 9 ⁵³³	50	10	632 8 ⁴⁸²	50
20	313 7 ⁵⁷⁰	40	20	630 2 ⁵³³	40	20	681 0 ⁴⁸¹	40
30	370 7 ⁵⁶⁹	30	30	683 5 ⁵³²	30	30	729 1 ⁴⁸¹	30
40	427 6 ⁵⁶⁹	20	40	736 7 ⁵³¹	20	40	777 2 ⁴⁸⁰	20
50	484 5 ⁵⁶⁹	10	50	789 8 ⁵³⁰	10	50	825 2 ⁴⁷⁸	10
100 0	I. 287 541 4 ⁵⁶⁸	0 260	110 0	I. 290 842 8 ⁵³⁰	0 250	120 0	I. 293 873 0 ⁴⁷⁸	0 240
	log <i>r</i>	<i>g</i>		log <i>r</i>	<i>g</i>		log <i>r</i>	<i>g</i>

TABLE XXX.—Arg. g . *Principal term of log radius vector.*

g	$\log r$		g	$\log r$		g	$\log r$	
° /		/ °	° /		/ °	° /		/ °
120 0	1. 293 873 0 ₄₇₈	0 240	130 0	1. 296 557 9 ₄₁₄	0 230	140 0	1. 298 835 7 ₃₄₂	0 220
10	920 8 ₄₇₇	50	10	599 3 ₄₁₄	50	10	869 9 ₃₄₁	50
20	1. 293 968 5 ₄₇₅	40	20	640 7 ₄₁₂	40	20	904 0 ₃₄₀	40
30	1. 294 016 0 ₄₇₅	30	30	681 9 ₄₁₁	30	30	938 0 ₃₃₈	30
40	063 5 ₄₇₄	20	40	723 0 ₄₁₀	20	40	1. 298 971 8 ₃₃₇	20
50	110 9 ₄₇₃	10	50	764 0 ₄₀₉	10	50	1. 299 005 5 ₃₃₆	10
121 0	1. 294 158 2 ₄₇₁	0 239	131 0	1. 296 804 9 ₄₀₈	0 229	141 0	1. 299 039 1 ₃₃₄	0 219
10	205 3 ₄₇₁	50	10	845 7 ₄₀₆	50	10	072 5 ₃₃₃	50
20	252 4 ₄₇₀	40	20	886 3 ₄₀₆	40	20	105 8 ₃₃₂	40
30	299 4 ₄₆₉	30	30	926 9 ₄₀₄	30	30	139 0 ₃₃₁	30
40	346 3 ₄₆₈	20	40	1. 296 967 3 ₄₀₃	20	40	172 1 ₃₃₀	20
50	393 1 ₄₆₇	10	50	1. 297 007 6 ₄₀₂	10	50	205 1 ₃₂₈	10
122 0	1. 294 439 8 ₄₆₆	0 238	132 0	1. 297 047 8 ₄₀₀	0 228	142 0	1. 299 237 9 ₃₂₆	0 218
10	486 4 ₄₆₄	50	10	087 8 ₃₉₉	50	10	270 5 ₃₂₆	50
20	532 8 ₄₆₄	40	20	127 7 ₃₉₉	40	20	303 1 ₃₂₄	40
30	579 2 ₄₆₃	30	30	167 6 ₃₉₈	30	30	335 5 ₃₂₃	30
40	625 5 ₄₆₂	20	40	207 4 ₃₉₆	20	40	367 8 ₃₂₁	20
50	671 7 ₄₆₁	10	50	247 0 ₃₉₄	10	50	399 9 ₃₂₁	10
123 0	1. 294 717 8 ₄₆₀	0 237	133 0	1. 297 286 4 ₃₉₃	0 227	143 0	1. 299 432 0 ₃₁₉	0 217
10	763 8 ₄₅₉	50	10	325 7 ₃₉₃	50	10	463 9 ₃₁₇	50
20	809 7 ₄₅₇	40	20	365 0 ₃₉₂	40	20	495 6 ₃₁₇	40
30	855 4 ₄₅₇	30	30	404 2 ₃₉₀	30	30	527 3 ₃₁₅	30
40	901 1 ₄₅₆	20	40	443 2 ₃₈₉	20	40	558 8 ₃₁₃	20
50	946 7 ₄₅₄	10	50	482 1 ₃₈₈	10	50	590 1 ₃₁₃	10
124 0	1. 294 992 1 ₄₅₄	0 236	134 0	1. 297 520 9 ₃₈₆	0 226	144 0	1. 299 621 4 ₃₁₁	0 216
10	1. 295 037 5 ₄₅₃	50	10	559 5 ₃₈₆	50	10	652 5 ₃₁₀	50
20	082 8 ₄₅₁	40	20	598 1 ₃₈₄	40	20	683 5 ₃₀₈	40
30	127 9 ₄₅₁	30	30	636 5 ₃₈₃	30	30	714 3 ₃₀₇	30
40	173 0 ₄₄₉	20	40	674 8 ₃₈₂	20	40	745 0 ₃₀₆	20
50	217 9 ₄₄₉	10	50	713 0 ₃₈₀	10	50	775 6 ₃₀₅	10
125 0	1. 295 262 8 ₄₄₇	0 235	135 0	1. 297 751 0 ₃₈₀	0 225	145 0	1. 299 806 1 ₃₀₃	0 215
10	307 5 ₄₄₆	50	10	789 0 ₃₇₈	50	10	836 4 ₃₀₂	50
20	352 1 ₄₄₆	40	20	826 8 ₃₇₇	40	20	866 6 ₃₀₀	40
30	396 7 ₄₄₄	30	30	864 5 ₃₇₆	30	30	896 6 ₂₉₉	30
40	441 1 ₄₄₃	20	40	902 1 ₃₇₄	20	40	926 5 ₂₉₈	20
50	485 4 ₄₄₂	10	50	939 5 ₃₇₃	10	50	956 3 ₂₉₇	10
126 0	1. 295 529 6 ₄₄₁	0 234	136 0	1. 297 976 8 ₃₇₂	0 224	146 0	1. 299 986 0 ₂₉₅	0 214
10	573 7 ₄₄₀	50	10	1. 298 014 0 ₃₇₁	50	10	1. 300 015 5 ₂₉₄	50
20	617 7 ₄₃₉	40	20	051 1 ₃₇₀	40	20	044 9 ₂₉₂	40
30	661 6 ₄₃₈	30	30	088 1 ₃₆₈	30	30	074 1 ₂₉₁	30
40	705 4 ₄₃₆	20	40	124 9 ₃₆₇	20	40	103 2 ₂₉₀	20
50	749 0 ₄₃₆	10	50	161 6 ₃₆₆	10	50	132 2 ₂₈₈	10
127 0	1. 295 792 6 ₄₃₄	0 233	137 0	1. 298 198 2 ₃₆₅	0 223	147 0	1. 300 161 0 ₂₈₇	0 213
10	836 0 ₄₃₄	50	10	234 7 ₃₆₄	50	10	189 7 ₂₈₆	50
20	879 4 ₄₃₂	40	20	271 1 ₃₆₂	40	20	218 3 ₂₈₅	40
30	922 6 ₄₃₂	30	30	307 3 ₃₆₁	30	30	246 8 ₂₈₃	30
40	1. 295 965 8 ₄₃₀	20	40	343 4 ₃₆₀	20	40	275 1 ₂₈₁	20
50	1. 296 008 8 ₄₂₉	10	50	379 4 ₃₅₈	10	50	303 2 ₂₈₁	10
128 0	1. 296 051 7 ₄₂₈	0 232	138 0	1. 298 415 2 ₃₅₈	0 222	148 0	1. 300 331 3 ₂₇₉	0 212
10	094 5 ₄₂₇	50	10	451 0 ₃₅₆	50	10	359 2 ₂₇₇	50
20	137 2 ₄₂₅	40	20	486 6 ₃₅₅	40	20	386 9 ₂₇₇	40
30	179 7 ₄₂₄	30	30	522 1 ₃₅₃	30	30	414 6 ₂₇₅	30
40	222 1 ₄₂₄	20	40	557 4 ₃₅₂	20	40	442 1 ₂₇₃	20
50	264 5 ₄₂₃	10	50	592 6 ₃₅₁	10	50	469 4 ₂₇₂	10
129 0	1. 296 306 8 ₄₂₁	0 231	139 0	1. 298 627 7 ₃₅₀	0 221	149 0	1. 300 496 6 ₂₇₁	0 211
10	348 9 ₄₂₀	50	10	662 7 ₃₄₉	50	10	523 7 ₂₇₀	50
20	390 9 ₄₁₉	40	20	697 6 ₃₄₇	40	20	550 7 ₂₆₈	40
30	432 8 ₄₁₈	30	30	732 3 ₃₄₆	30	30	577 5 ₂₆₆	30
40	474 6 ₄₁₇	20	40	766 9 ₃₄₄	20	40	604 1 ₂₆₆	20
50	516 3 ₄₁₆	10	50	801 3 ₃₄₄	10	50	630 7 ₂₆₄	10
130 0	1. 296 557 9	0 230	140 0	1. 298 835 7	0 220	150 0	1. 300 657 1	0 210
	$\log r$	g		$\log r$	g		$\log r$	g

TABLE XXX.—Arg. *g*. Principal term of log radius vector.

<i>g</i>	log <i>r</i>		<i>g</i>	log <i>r</i>		<i>g</i>	log <i>r</i>	
° /		/ °	° /		/ °	° /		/ °
150 0	I. 300 657 I ²⁶²	0 210	160 0	I. 301 984 4 ¹⁷⁸	0 200	170 0	I. 302 791 2 ⁸⁹	0 190
10	683 3 ²⁶¹	50	10	I. 302 002 2 ¹⁷⁶	50	10	800 I ⁸⁸	50
20	709 4 ²⁶⁰	40	20	019 8 ¹⁷⁵	40	20	808 9 ⁸⁶	40
30	735 4 ²⁵⁹	30	30	037 3 ¹⁷³	30	30	817 5 ⁸⁵	30
40	761 3 ²⁵⁷	20	40	054 6 ¹⁷²	20	40	826 0 ⁸⁴	20
50	787 0 ²⁵⁶	10	50	071 8 ¹⁷⁰	10	50	834 4 ⁸²	10
151 0	I. 300 812 6 ²⁵⁴	0 209	161 0	I. 302 088 8 ¹⁶⁹	0 199	171 0	I. 302 842 6 ⁸⁰	0 189
10	838 0 ²⁵³	50	10	105 7 ¹⁶⁸	50	10	850 6 ⁷⁹	50
20	863 3 ²⁵¹	40	20	122 5 ¹⁶⁶	40	20	858 5 ⁷⁷	40
30	888 4 ²⁵⁰	30	30	139 I ¹⁶⁴	30	30	866 2 ⁷⁶	30
40	913 4 ²⁴⁸	20	40	155 5 ¹⁶³	20	40	873 8 ⁷⁴	20
50	938 3 ²⁴⁸	10	50	171 8 ¹⁶²	10	50	881 2 ⁷³	10
152 0	I. 300 963 I ²⁴⁶	0 208	162 0	I. 302 188 0 ¹⁶¹	0 198	172 0	I. 302 888 5 ⁷²	0 188
10	I. 300 987 7 ²⁴⁴	50	10	204 I ¹⁵⁹	50	10	895 7 ⁷⁰	50
20	I. 301 012 I ²⁴³	40	20	220 0 ¹⁵⁷	40	20	902 7 ⁶⁸	40
30	036 4 ²⁴²	30	30	235 7 ¹⁵⁶	30	30	909 5 ⁶⁷	30
40	060 6 ²⁴¹	20	40	251 3 ¹⁵⁴	20	40	916 2 ⁶⁵	20
50	084 7 ²³⁹	10	50	266 7 ¹⁵³	10	50	922 7 ⁶⁴	10
153 0	I. 301 108 6 ²³⁷	0 207	163 0	I. 302 282 0 ¹⁵²	0 197	173 0	I. 302 929 I ⁶³	0 187
10	132 3 ²³⁶	50	10	297 2 ¹⁵⁰	50	10	935 4 ⁶¹	50
20	155 9 ²³⁵	40	20	312 2 ¹⁴⁸	40	20	941 5 ⁶⁰	40
30	179 4 ²³⁴	30	30	327 0 ¹⁴⁷	30	30	947 4 ⁵⁸	30
40	202 8 ²³²	20	40	341 7 ¹⁴⁶	20	40	953 2 ⁵⁶	20
50	226 0 ²³⁰	10	50	356 3 ¹⁴⁴	10	50	958 8 ⁵⁵	10
154 0	I. 301 249 0 ²²⁹	0 206	164 0	I. 302 370 7 ¹⁴²	0 196	174 0	I. 302 964 3 ⁵⁴	0 186
10	271 9 ²²⁸	50	10	384 9 ¹⁴¹	50	10	969 7 ⁵²	50
20	294 7 ²²⁶	40	20	399 0 ¹⁴⁰	40	20	974 9 ⁵⁰	40
30	317 3 ²²⁵	30	30	413 0 ¹³⁹	30	30	979 9 ⁴⁹	30
40	339 8 ²²⁴	20	40	426 9 ¹³⁷	20	40	984 8 ⁴⁷	20
50	362 2 ²²²	10	50	440 6 ¹³⁵	10	50	989 5 ⁴⁶	10
155 0	I. 301 384 4 ²²¹	0 205	165 0	I. 302 454 I ¹³⁴	0 195	175 0	I. 302 994 I ⁴⁴	0 185
10	406 5 ²¹⁹	50	10	467 5 ¹³²	50	10	I. 302 998 5 ⁴³	50
20	428 4 ²¹⁸	40	20	480 7 ¹³¹	40	20	I. 303 002 8 ⁴²	40
30	450 2 ²¹⁶	30	30	493 8 ¹²⁹	30	30	007 0 ⁴⁰	30
40	471 8 ²¹⁵	20	40	506 7 ¹²⁸	20	40	011 0 ³⁸	20
50	493 3 ²¹⁴	10	50	519 5 ¹²⁷	10	50	014 8 ³⁷	10
156 0	I. 301 514 7 ²¹²	0 204	166 0	I. 302 532 2 ¹²⁵	0 194	176 0	I. 303 018 5 ³⁵	0 184
10	535 9 ²¹¹	50	10	544 7 ¹²³	50	10	022 0 ³⁴	50
20	557 0 ²⁰⁹	40	20	557 0 ¹²²	40	20	025 4 ³²	40
30	577 9 ²⁰⁸	30	30	569 2 ¹²¹	30	30	028 6 ³¹	30
40	598 7 ²⁰⁷	20	40	581 3 ¹¹⁹	20	40	031 7 ³⁰	20
50	619 4 ²⁰⁵	10	50	593 2 ¹¹⁷	10	50	034 7 ²⁸	10
157 0	I. 301 639 9 ²⁰³	0 203	167 0	I. 302 604 9 ¹¹⁶	0 193	177 0	I. 303 037 5 ²⁶	0 183
10	660 2 ²⁰²	50	10	616 5 ¹¹⁵	50	10	040 I ²⁵	50
20	680 4 ²⁰¹	40	20	628 0 ¹¹³	40	20	042 6 ²³	40
30	700 5 ¹⁹⁹	30	30	639 3 ¹¹²	30	30	044 9 ²²	30
40	720 4 ¹⁹⁸	20	40	650 5 ¹¹⁰	20	40	047 I ²¹	20
50	740 2 ¹⁹⁷	10	50	661 5 ¹⁰⁹	10	50	049 2 ¹⁸	10
158 0	I. 301 759 9 ¹⁹⁵	0 202	168 0	I. 302 672 4 ¹⁰⁷	0 192	178 0	I. 303 051 0 ¹⁷	0 182
10	779 4 ¹⁹³	50	10	683 I ¹⁰⁶	50	10	052 7 ¹⁶	50
20	798 7 ¹⁹²	40	20	693 7 ¹⁰⁴	40	20	054 3 ¹⁵	40
30	817 9 ¹⁹¹	30	30	704 I ¹⁰³	30	30	055 8 ¹²	30
40	837 0 ¹⁸⁹	20	40	714 4 ¹⁰¹	20	40	057 0 ¹¹	20
50	855 9 ¹⁸⁸	10	50	724 5 ¹⁰⁰	10	50	058 I ¹⁰	10
159 0	I. 301 874 7 ¹⁸⁷	0 201	169 0	I. 302 734 5 ⁹⁸	0 191	179 0	I. 303 059 I ⁹	0 181
10	893 4 ¹⁸⁵	50	10	744 3 ⁹⁷	50	10	060 0 ⁷	50
20	911 9 ¹⁸³	40	20	754 0 ⁹⁵	40	20	060 7 ⁵	40
30	930 2 ¹⁸²	30	30	763 5 ⁹⁴	30	30	061 2 ⁴	30
40	948 4 ¹⁸¹	20	40	772 9 ⁹²	20	40	061 6 ²	20
50	966 5 ¹⁷⁹	10	50	782 I ⁹¹	10	50	061 8 ¹	10
160 0	I. 301 984 4 ¹⁷⁸	0 200	170 0	I. 302 791 2 ¹⁷⁸	0 190	180 0	I. 303 061 9 ¹	0 180
	log <i>r</i>	<i>g</i>		log <i>r</i>	<i>g</i>		log <i>r</i>	<i>g</i>

TABLE XXXI.—Arg. 1. *Action of Neptune.*

Arg.	(b.c. 0)	(b.s. 1)	(b.c. 1)	(b.s. 2)	(b.c. 2)	(b.s. 3)	(b.c. 3)	Arg.	(b.c. 0)	(b.s. 1)	(b.c. 1)	(b.s. 2)	(b.c. 2)	(b.s. 3)	(b.c. 3)
0	+4	+20	-24	-8	-5	-1	+1	300	-4	-45	+81	+18	+13	+3	-2
5	4	18	25	9	3	1	1	305	4	40	88	20	10	2	3
10	4	15	26	9	-2	-1	1	310	5	33	94	22	6	+1	4
15	4	13	26	8	0	0	1	315	5	25	99	23	+2	0	4
20	4	11	26	7	+2	0	1	320	5	17	103	22	-2	-1	4
25	+3	+8	-25	-6	+3	+1	+1	325	-6	-7	+104	+21	-6	-2	-3
30	3	6	23	5	3	1	1	330	6	+2	104	18	10	2	2
35	3	4	21	4	4	1	+1	335	6	11	102	15	13	3	2
40	3	3	19	2	4	1	0	340	6	20	98	11	15	3	-1
45	3	+2	16	-1	4	1	0	345	6	28	92	8	16	3	0
50	+3	0	-14	0	+4	+1	0	350	-7	+34	+85	+4	-16	-2	0
55	2	0	11	+1	3	0	0	355	6	40	77	0	16	2	-1
60	2	0	9	1	3	0	0	360	6	45	68	-3	15	-1	1
65	1	0	7	2	2	0	0	365	5	48	59	6	13	0	2
70	1	0	5	2	2	0	0	370	5	51	50	8	11	0	2
75	+1	0	-3	+2	+1	0	0	375	-4	+52	+42	-10	-9	+1	+2
80	+1	0	2	2	1	0	0	380	4	54	33	11	7	1	1
85	0	+1	-1	2	1	0	0	385	3	56	24	12	4	1	+1
90	0	+1	0	2	+1	0	0	390	2	58	16	12	-2	1	0
95	0	0	+1	2	0	0	0	395	2	60	+8	13	+1	1	0
100	0	0	+2	+2	0	0	0	400	-1	+62	0	-12	+4	+1	-1
105	0	-1	3	2	0	0	0	405	1	64	-8	12	6	0	1
110	-1	1	4	2	-1	0	0	410	1	66	16	11	9	0	2
115	1	2	5	2	1	0	0	415	1	68	25	9	11	-1	2
120	1	3	6	2	2	0	0	420	1	70	35	7	14	1	2
125	-1	-4	+8	+2	-3	0	0	425	-2	+70	-44	-4	+16	-2	-2
130	1	4	10	+1	3	+1	0	430	2	69	54	0	18	3	2
135	1	5	13	0	4	1	0	435	3	68	63	+4	18	3	-1
140	-1	5	15	-1	5	1	0	440	3	64	72	8	18	3	0
145	0	6	18	2	5	1	0	445	4	59	81	12	17	3	+1
150	0	-5	+21	-4	-5	+1	-1	450	-5	+54	-88	+16	+15	-3	+2
155	0	5	23	5	4	+1	1	455	6	47	93	19	11	2	2
160	0	4	26	7	3	0	1	460	6	39	97	22	7	-1	3
165	0	-2	28	8	2	0	1	465	7	30	100	24	+3	0	4
170	0	0	29	9	-1	0	2	470	7	20	100	24	-1	+1	4
175	0	+2	+30	-9	+1	-1	-1	475	-7	+11	-98	+23	-5	+2	+4
180	+1	4	31	9	3	1	1	480	7	+3	95	21	9	3	4
185	1	7	30	8	4	2	-1	485	7	-5	91	19	12	4	3
190	1	9	29	8	6	2	0	490	7	12	86	16	15	4	+2
195	+1	11	28	7	7	2	0	495	7	18	79	12	16	4	0
200	0	+12	+26	-6	+8	-1	0	500	-6	-22	-71	+9	-16	+3	0
205	0	12	24	4	8	1	+1	505	5	25	63	6	16	3	-1
210	0	11	21	3	8	1	1	510	4	26	55	3	15	2	2
215	0	10	18	3	8	1	1	515	3	26	48	+1	13	+1	2
220	0	8	15	2	7	1	1	520	2	25	40	0	11	0	2
225	0	+4	+13	-2	+7	-1	+1	525	-2	-23	-32	0	-10	0	-2
230	-1	0	11	1	7	1	1	530	-1	19	26	0	9	-1	2
235	1	-5	10	2	7	1	1	535	0	15	20	0	8	1	1
240	1	11	10	2	7	1	1	540	0	10	16	+1	7	-1	1
245	1	17	10	3	8	-1	1	545	+1	-5	12	1	7	0	-1
250	-1	-23	+12	-3	+9	0	+2	550	+2	0	-10	+1	-7	0	0
255	1	29	15	3	10	0	2	555	2	+5	9	1	8	0	0
260	2	35	20	3	12	0	2	560	3	10	9	+1	8	0	-1
265	2	40	25	-2	14	+1	2	565	3	14	10	0	9	0	1
270	2	45	31	0	16	2	2	570	3	18	11	-1	10	-1	1
275	-2	-48	+38	+2	+18	+2	+2	575	+3	+20	-13	-2	-10	-1	-1
280	3	51	47	5	18	3	1	580	3	22	16	4	10	1	-1
285	3	52	55	9	18	4	+1	585	4	22	18	5	9	1	0
290	3	50	64	12	18	4	0	590	4	22	21	6	8	2	0
295	4	48	73	15	16	4	-2	595	4	21	23	7	6	2	0
300	-4	-45	+81	+18	+13	+3	-2	600	+4	+20	-24	-8	-5	-1	+1

The units of this table are hundredths of a second.

TABLE XXXII.—Arg. 2. *Action of Saturn.*

Arg.	(b.c. 0)	(b.s. 1)	(b.c. 1)	(b.s. 2)	(b.c. 2)	(b.s. 3)	(b.c. 3)	Arg.	(b.c. 0)	(b.s. 1)	(b.c. 1)	(b.s. 2)	(b.c. 2)	(b.s. 3)	(b.c. 3)
0	+30	— 47	+233	+16	+ 8	— 8	— 3	300	+14	+117	—174	— 6	—11	+5	+4
5	30	31	243	16	7	8	3	305	14	101	186	7	11	5	4
10	30	— 15	254	17	6	8	2	310	14	84	197	7	11	6	4
15	30	+ 1	264	17	5	8	1	315	14	67	208	8	11	6	3
20	29	17	273	17	4	8	—1	320	14	50	219	9	11	6	3
25	+29	+ 33	+281	+17	+ 3	— 8	0	325	+14	+ 33	—228	—10	—11	+7	+2
30	28	49	289	17	2	8	+1	330	14	+ 15	237	11	10	7	2
35	28	64	296	16	+ 1	8	2	335	14	— 2	245	12	10	7	1
40	27	80	302	16	0	8	2	340	15	19	253	13	10	7	1
45	27	95	306	15	— 1	8	3	345	15	36	260	14	9	7	+1
50	+26	+110	+310	+14	— 1	— 8	+3	350	+15	— 53	—266	—15	— 9	+8	0
55	25	124	313	13	2	8	4	355	15	69	271	16	8	8	0
60	24	138	316	12	3	8	4	360	15	86	275	17	8	8	0
65	23	152	317	11	3	8	4	365	15	102	278	18	7	8	—1
70	23	165	318	10	4	8	4	370	16	118	281	19	6	8	1
75	+22	+178	+318	+ 8	— 4	— 8	+5	375	+16	—133	—283	—19	— 5	+8	—2
80	21	190	317	7	4	8	5	380	16	148	284	20	4	8	2
85	20	202	316	5	4	7	5	385	16	162	284	20	3	8	2
90	19	214	314	4	4	7	6	390	17	176	283	21	2	8	2
95	19	225	310	2	4	7	6	395	17	189	281	22	— 1	8	3
100	+18	+236	+306	+ 1	— 5	— 7	+6	400	+17	—202	—279	—23	0	+8	—3
105	17	246	301	0	4	6	6	405	17	214	274	24	+ 1	7	3
110	16	256	296	— 1	4	6	6	410	18	225	269	24	2	7	4
115	15	265	290	3	4	6	6	415	18	236	264	25	4	7	4
120	15	274	284	4	4	6	6	420	18	246	259	25	5	7	4
125	+14	+283	+277	— 4	— 3	— 6	+6	425	+18	—255	—253	—25	+ 6	— 6	—4
130	14	291	269	5	3	6	5	430	19	263	245	25	7	6	5
135	13	298	261	6	3	5	5	435	19	270	237	25	8	6	5
140	13	305	253	7	3	5	5	440	20	277	228	24	9	6	6
145	12	311	244	8	2	5	5	445	20	282	218	24	10	5	6
150	+12	+317	+234	— 8	— 2	— 5	+5	450	+21	—287	—207	—24	+11	+4	—6
155	12	322	224	8	2	4	5	455	21	291	196	23	12	4	6
160	12	326	214	8	2	4	5	460	22	294	184	22	13	3	6
165	12	329	203	8	2	4	5	465	22	296	171	21	14	2	6
170	12	332	192	9	2	4	5	470	23	297	158	20	14	2	7
175	+12	+333	+180	— 8	— 1	— 3	+5	475	+23	—297	—144	—19	+15	+2	—7
180	12	334	168	8	1	3	6	480	24	296	130	18	16	1	7
185	12	334	155	8	1	2	6	485	24	294	115	17	17	+1	7
190	12	334	142	8	2	2	6	490	25	291	100	16	17	0	7
195	12	332	129	7	2	2	6	495	25	287	85	14	17	0	7
200	+13	+330	+116	— 7	— 2	— 2	+6	500	+26	—283	— 70	—12	+17	—1	—7
205	13	327	102	6	3	1	6	505	26	277	54	11	18	2	7
210	13	323	88	6	3	1	6	510	27	271	37	9	18	2	7
215	13	318	74	6	4	—1	6	515	27	264	21	7	18	3	7
220	13	312	59	5	4	0	7	520	28	256	— 5	6	18	3	7
225	+14	+305	+ 44	— 5	— 5	0	+7	525	+28	—247	+ 11	— 4	+18	— 4	—7
230	14	297	29	4	5	0	7	530	28	238	28	2	17	4	7
235	14	288	+ 14	4	6	+1	7	535	28	228	44	— 1	17	4	7
240	14	279	— 1	4	7	1	7	540	29	217	60	+ 1	16	5	7
245	14	269	16	4	7	2	7	545	29	205	76	3	16	6	7
250	+14	+258	— 32	— 4	— 8	+2	+7	550	+30	—193	+ 92	+ 5	+15	— 6	—7
255	14	247	47	4	8	2	7	555	30	180	108	6	15	6	6
260	14	235	62	4	9	3	6	560	30	167	124	8	14	6	6
265	14	222	77	4	9	3	6	565	30	153	139	9	14	6	6
270	14	208	92	4	10	3	6	570	30	139	154	10	13	7	5
275	+14	+194	—106	— 4	—10	+3	+6	575	+30	—125	+168	+12	+12	—7	—5
280	14	180	120	4	10	4	6	580	30	110	182	13	11	7	5
285	14	165	134	5	11	4	5	585	30	95	195	14	11	7	4
290	14	149	148	5	11	5	5	590	30	79	208	15	10	7	4
295	14	133	161	6	11	5	4	595	30	63	221	15	9	7	3
300	+14	+117	—174	— 6	—11	+5	+4	600	+30	— 47	+233	+16	+ 8	—8	—3

The units of this table are hundredths of a second.

TABLE XXXIII.—Arg. 3. *Action of Jupiter.*

Arg.	(b.c. 0)	(b.s. 1)	(b.c. 1)	(b.s. 2)	(b.c. 2)	(b.s. 3)	(b.c. 3)	Arg.	(b.c. 0)	(b.s. 1)	(b.c. 1)	(b.s. 2)	(b.c. 2)	(b.s. 3)	(b.c. 3)
0	+5	-22	-54	-9	-17	0	0	300	+8	+33	+64	-5	-7	0	0
5	5	19	56	8	17	0	0	305	8	30	65	4	8	0	0
10	5	16	57	7	18	0	0	310	8	27	67	3	8	0	0
15	5	12	58	5	18	0	0	315	8	24	68	2	8	0	0
20	5	9	59	4	18	0	0	320	8	21	68	-1	8	-1	0
25	+5	-6	-60	-2	-18	0	0	325	+8	+17	+69	0	-8	-1	0
30	5	-2	60	0	18	0	0	330	8	14	70	+1	8	1	0
35	5	+1	61	+1	18	0	0	335	8	11	70	2	7	1	0
40	5	5	61	2	18	0	0	340	8	8	70	3	7	1	0
45	5	8	61	4	17	0	0	345	8	4	71	4	6	1	0
50	+5	+12	-61	+5	-16	0	0	350	+8	+1	+70	+5	-6	-1	0
55	5	15	60	6	15	0	+1	355	8	-2	70	5	5	1	0
60	5	18	60	8	15	0	1	360	8	6	70	6	4	1	0
65	5	22	59	9	14	0	1	365	8	9	69	7	4	1	-1
70	5	25	58	10	12	0	1	370	8	12	68	7	3	1	1
75	+5	+28	-57	+10	-11	0	+1	375	+8	-15	+67	+7	-2	-1	-1
80	5	31	56	11	10	0	1	380	8	18	66	8	-1	1	1
85	5	34	54	12	9	0	1	385	8	21	65	8	0	1	1
90	5	37	52	12	7	0	1	390	8	24	63	8	+2	-1	1
95	5	40	51	13	6	0	1	395	8	27	62	8	3	0	1
100	+6	+43	-49	+13	-4	0	+1	400	+8	-30	+60	+7	+4	0	-1
105	6	46	47	13	3	-1	1	405	8	33	58	7	5	0	1
110	6	48	45	13	-2	1	1	410	8	36	56	6	6	0	1
115	6	50	42	13	0	1	1	415	8	38	54	6	7	0	1
120	6	53	40	12	+1	1	1	420	8	40	51	5	8	0	1
125	+6	+55	-37	+12	+2	-1	+1	425	+8	-43	+49	+4	+9	0	-1
130	6	57	34	11	4	1	1	430	7	45	46	3	10	0	1
135	6	59	32	11	5	1	1	435	7	47	44	2	10	+1	1
140	6	61	29	10	6	1	+1	440	7	49	41	+1	11	1	1
145	6	63	26	9	7	1	0	445	7	51	38	0	11	1	1
150	+6	+64	-23	+8	+8	-2	0	450	+7	-52	+35	-1	+12	+1	-1
155	6	66	20	7	8	2	0	455	7	54	32	2	12	1	1
160	6	67	16	6	9	2	0	460	7	55	28	4	12	1	-1
165	6	68	13	5	9	2	0	465	7	56	25	5	12	1	0
170	6	69	10	4	10	2	0	470	7	57	22	6	12	1	0
175	+6	+69	-6	+2	+10	-2	0	475	+7	-57	+18	-8	+11	+1	0
180	6	70	-3	+1	10	2	-1	480	7	58	15	9	11	1	0
185	6	70	0	0	10	1	1	485	7	58	12	10	10	1	0
190	6	70	+4	-1	10	1	1	490	7	59	8	12	10	1	0
195	7	70	7	2	10	1	1	495	7	59	5	13	9	1	0
200	+7	+70	+11	-3	+9	-1	-1	500	+6	-59	-1	-14	+8	+1	0
205	7	69	14	4	9	1	1	505	6	58	-2	15	7	1	0
210	7	69	17	5	8	1	1	510	6	58	6	16	6	1	+1
215	7	68	21	6	8	-1	1	515	6	57	9	16	5	+1	1
220	7	67	24	7	7	0	1	520	6	56	13	17	3	0	1
225	+7	+66	+27	-8	+6	0	-1	525	+6	-55	-16	-17	+2	0	+1
230	7	65	30	8	5	0	1	530	6	54	19	18	+1	0	1
235	7	63	33	9	4	0	1	535	6	53	22	18	-1	0	1
240	7	62	36	9	3	0	1	540	6	51	26	18	2	0	1
245	7	60	39	9	2	0	1	545	6	50	29	18	4	0	+1
250	+7	+58	+42	-9	+1	0	-1	550	+6	-48	-32	-18	-5	0	0
255	7	56	45	9	0	0	1	555	6	46	34	18	7	0	0
260	8	54	48	9	-1	0	-1	560	6	43	37	17	8	0	0
265	8	52	50	9	2	0	0	565	6	41	40	17	9	0	0
270	8	50	52	9	3	0	0	570	6	39	42	16	11	0	0
275	+8	+47	+54	-8	-4	0	0	575	+6	-36	-45	-15	-12	0	0
280	8	44	57	8	5	0	0	580	6	34	47	14	13	0	0
285	8	42	59	7	5	0	0	585	6	31	49	13	14	0	0
290	8	39	61	6	6	0	0	590	6	28	51	12	15	0	0
295	8	36	62	5	7	0	0	595	5	25	53	11	16	0	0
300	+8	+33	+64	-5	-7	0	0	600	+5	-22	-54	-9	-17	0	0

The units of this table are hundredths of a second.

TABLE XXXIV.—*Values of i and $\log \sin i$.*

Date.	<i>i</i>			log sin <i>i</i>	Date.	<i>i</i>			log sin <i>i</i>				
	°	'	"			°	'	"					
1600	0	46	16. 38	+14	8. 129 041	+21	1800	0	46	19. 56	+19	8. 129 539	+29
10			16. 52	+13	062	+21	10			19. 75	+20	568	+30
20			16. 65	+14	083	+22	20			19. 95	+19	598	+30
30			16. 79	+15	105	+22	30			20. 14	+20	628	+31
40			16. 94	+14	127	+23	40			20. 34	+20	659	+32
1650	0	46	17. 08	+15	8. 129 150	+23	1850	0	46	20. 54	+20	8. 129 691	+32
60			17. 23	+15	173	+23	60			20. 74	+21	723	+32
70			17. 38	+15	196	+24	70			20. 95	+21	755	+33
80			17. 53	+15	220	+24	80			21. 16	+22	788	+34
90			17. 68	+16	244	+25	90			21. 38	+22	822	+34
1700	0	46	17. 84	+16	8. 129 269	+25	1900	0	46	21. 60	+22	8. 129 856	+34
10			18. 00	+16	294	+25	10			21. 82	+22	890	+35
20			18. 16	+17	319	+26	20			22. 04	+23	925	+36
30			18. 33	+17	345	+26	30			22. 27	+23	961	+37
40			18. 50	+17	371	+27	40			22. 50	+24	998	+37
1750	0	46	18. 67	+17	8. 129 398	+27	1950	0	46	22. 74	+24	8. 130 035	+37
60			18. 84	+18	425	+28	60			22. 98	+25	072	+38
70			19. 02	+18	453	+28	70			23. 23	+25	110	+39
80			19. 20	+18	481	+29	80			23. 48	+25	149	+39
90			19. 38	+18	510	+29	90			23. 73	+25	188	+40
1800	0	46	19. 56		8. 129 539		2000	0	46	23. 98		8. 130 228	

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TABLES
OF THE
HELIOCENTRIC MOTION OF NEPTUNE.
BY
SIMON NEWCOMB.

A P—VOL VII, PART IV—1

417

PREFACE.

The following tables of Neptune mark the completion of one portion of a work projected when the writer took charge of the Nautical Almanac Office in 1877. This portion comprised the construction of new tables of the eight major planets, based on consistent and uniform elements and masses and on all the available observations since 1750.

On surveying the completed work the author is painfully conscious that in several points it fails to reach the standard he had set for it. The principal causes of any defects that may be found in it are set forth in the preface to Volume VI, containing the tables of the four inner planets. An additional cause was the enforced retirement of the author from active service before the work could be brought to a close. It was only by a special temporary arrangement that he was authorized to supervise the completion of these tables.

The tables in this, the concluding part, are based upon the observations of LALANDE in 1795, and meridian observations made at Greenwich, Cambridge, Paris, and Washington since the optical discovery of the planet in 1846.

The Washington observations made use of extend to the opposition of 1897-98, those of Greenwich to the opposition of 1896-97, those of Paris to the end of 1891, and those at Cambridge to the end of 1868. The unpublished observations made at Greenwich were communicated in manuscript by the Astronomer Royal, and those made at Paris and Washington by the Directors of the respective observatories.

In their general form the tables are similar to those published by the Smithsonian Institution in 1865. The periodic perturbations produced by Uranus have, however, been completely recomputed, and those by Jupiter and Saturn revised. No errors seriously affecting the theory during the period of observation were discovered in the older work.

Owing to the interest which attaches to the question whether any unknown body may influence the motion of Neptune, a special discussion of residuals in longitude between theory and observation was made. To form the equations of condition, normal places, generally four in number, were formed from the observations of each opposition. After the solution of the equations by the method of least squares, the residual excesses of observation over theory were separated into groups, each comprising four oppositions. From each group the mean outstanding error in heliocentric

longitude and annual parallax was derived by a solution of equations in which these quantities were supposed to be the only unknowns remaining. The residual corrections thus found to be remaining are as follows:

Mean residuals of longitude and parallax of Neptune for 4-year periods.

Mean Year.	$\Delta\lambda$	Δ Parallax.	Mean Year.	$\Delta\lambda$	Δ Parallax.
	"	"		"	"
1795	- 2.05	.	1872	- 0.30	0.00
1848	- 0.27	+ 0.20	1876	+ 0.20	- 0.05
1852	+ 0.26	+ 0.60	1880	+ 0.32	+ 0.19
1856	+ 0.07	+ 0.08	1884	- 0.36	+ 0.72
1860	- 0.52	- 0.07	1888	- 0.30	+ 0.45
1864	- 0.37	+ 0.18	1892	+ 0.25	+ 0.35
1868	+ 0.12	+ 0.04	1896	- 0.28	+ 0.19

The mean residuals in longitude are larger than would have been anticipated from the discrepancies of the individual results, while those of parallax show a preponderance of positive values. The residuals in longitude are not, however, of the systematic character that they would show if arising from the action of an unknown body. The excess of their amount over that which would have been given by the theory of probabilities may be due to the effect of personal equation varying with the magnitude, of which no account has been taken in the discussion. In the case of the annual parallaxes the determination necessarily has less weight than in the case of the longitude. Systematic errors varying with the hour of the night will amply account for the preponderance of positive errors.

The work of computing the periodic perturbations by Uranus, revising or correcting those by Jupiter and Saturn, forming the comparison with observation and correcting the elements, was mainly performed under the author's personal direction by Dr. W. S. EICHELBERGER. The special investigation of the secular terms and those of long period was principally made by Dr. W. S. HARSHMAN.

TABLES OF NEPTUNE.

INTRODUCTION.

I. BASIS OF THE TABLES.

These tables are based on an investigation which is as yet unpublished. The perturbations have for the most part been recomputed, and the elements have been determined from the best available observations up to and including the opposition of 1897-98. These elements have been reduced to the epoch

1900, January 0, Greenwich Mean Noon,

as the fundamental epoch of the tables.

In the construction of the tables the elements have been used as affected not only by their secular variations, but by the inequalities of long period, about 4 220 years, arising from the fact that the mean motion of Uranus is nearly twice that of Neptune.

The adopted precession is, for the sake of uniformity, that of the other planetary tables, and is less by $0''.82$ per century than the precession derived in Volume VIII, Part I, of the *Astronomical Papers*. As a change in this quantity only alters the reduction of the motion to the celestial sphere, its effect upon the computed coordinates of the planet is inappreciable in the course of any one century. The only way in which the theoretical coordinates are altered is through the circumstance that the theoretical motions of the node and perihelion are referred to the celestial sphere. Hence, by the change in question, these motions referred to the equinox are altered by the amount $0''.82$ per century. This quantity is, in the maximum effect of the alteration upon the coordinates of the planet, in the case of the longitude, multiplied by twice the eccentricity, and, in case of the latitude, by the inclination. The elements of Neptune, affected by the inequality of the long period, for the epoch 1900.0, follow. In these expressions T is the time after 1900.0, expressed in units of 36 525 days, and Δl , $\Delta \pi$, etc., express the sum of the secular and long period perturbations.

Elements of Neptune.

Mean longitude:

$$l = 85^{\circ} 1' 30''.63 + 791\,505''.84 T + 1''.109 T^2 + \Delta l$$

Mean sidereal motion in a Julian year:

$$n = 7\,864''.804\,2$$

Longitude of the perihelion, referred to the equinox of 1900.0:

$$\pi = 43^{\circ} 45' 20''.2 + \Delta\pi$$

Mean anomaly, counted from the fixed perihelion of 1900.0:

$$g = 41^{\circ} 16'.173 + 13\ 108'.007T + \Delta l$$

Eccentricity:

$$\begin{aligned} e &= 0.008\ 533\ 41 + \Delta e \\ &= 1\ 760''.142 + [5.314\ 4] \Delta e \end{aligned}$$

Longitude of the node:

$$\theta = 130^{\circ} 40' 44''.0 + 3\ 963''.5T + 0''.9T^2 + \Delta\theta$$

Inclination to the ecliptic:

$$i = 1^{\circ} 46' 45''.32 - 33''.495T - 0''.027T^2 + \Delta i$$

The logarithm of the mean distance, as computed by the equation—

$$a^3 n^2 = k^2(1 + m)$$

where, for seconds and for the Julian year—

$$\log k = 6.112\ 596\ 80$$

is

$$\log a = 1.477\ 946\ 61$$

It has received the following corrections in units of the eighth place of decimals on account of the action of the several planets:

Action of Venus;	+	36
Earth;	+	44
Mars;	+	5
Jupiter;	+	141 40
Saturn;	+	44 79
Uranus;	+	9 49
<hr/>		
Sum,	+	196 53

Thus we have in the tables:

$$\log a = 1.478\ 143\ 14$$

With the mean motions for 1900 we have for the periods of revolution of the planet—

Sidereal revolution 164.784 8 Julian years,
Tropical revolution 163.738 5 Julian years.

But these periods vary, owing to the inequalities of long period in the mean motion.

Perturbations of the Elements.

The preceding values of the elements used contain the perturbations Δl , etc. Approximate values of the terms of long period in these perturbations are given in Table A, using the following notation:

λ, λ' ; the mean distance of the respective planet from the ascending node of Neptune upon Uranus.

w, w' ; the distances from the common node to the respective perihelia.

In the arguments the accents refer to the outer planet, Neptune.

The symbols i_1 and θ_1 refer to the node of Neptune on Uranus, and have no reference to the ecliptic.

TABLE A.—*Terms of long period in the action of Uranus on Neptune, integrated only to first power of masses.*

λ'	λ	w'	w	1850 Δl	Red. to 1900	1850 $10^6 \Delta \log a$	Red. to 1900	1850 Δe	Red. to 1900	1850 $\Delta \pi'$	Red. to 1900	Δi_1	Sin $\gamma \Delta \theta_1$
				sin		cos		cos		sin		cos	sin
				"	"	"	"	"	"	"	"	"	"
2, -1,	0, -1			+1990.01	+5.71	-11358	-33	+0.11	. .	+17.3	. .	+0.355	+1.688
	-1, 0			-130.15	-0.49	+841	+3	+117.50	. .	+13835.5	-32.2	-0.013	-0.286
	0, +1			+1.01	. .	-6	. .	0.00	. .	0.0	. .	-0.548	-0.548
	+1, -2			+0.50	. .	-3	. .	+0.39	. .	-45.5	-0.1	. .	. .
	-2, +1			+0.20	. .	-1	. .	-0.33	. .	-38.7	-0.1	. .	. .
	+1, 0			-0.01	. .	0	. .	-0.01	. .	+1.4	. .	+0.008	+0.008
4, -2,	0, 0			-2.57	. .	+31	. .	0.00	. .	0.0	. .	+1.390	+1.390
	0, -2			-66.12	-0.38	+778	+4	-0.01	. .	-7.0	. .	-0.024	-0.108
	-1, -1			+35.02	+0.23	-408	-3	-28.49	-0.08	-3352.3	+3.0	+0.010	+0.048
	-2, 0			-4.58	-0.03	+53	. .	+7.39	+0.03	+869.4	. .	. .	. .
	+1, -3			-0.06	. .	+1	. .	-0.05	. .	+5.7	. .	. .	. .
	+1, -1			. .	. .	. .	. .	. .	. .	. .	. .	+0.001	+0.001
	-1, +1			. .	. .	. .	. .	. .	. .	. .	. .	-0.010	-0.010
6, -3,	0, -3			+3.62	+0.03	-66	-1	0.00	. .	0.0	. .	. .	. .
	-1, -2			-2.89	-0.03	+52	. .	+2.42	+0.01	+284.9	+0.6	. .	. .
	-2, -1			+0.77	+0.01	-14	. .	-1.27	-0.01	-149.4	-0.4	. .	. .
	0, -1			+0.30	. .	-6	. .	0.00	. .	0.0	. .	-0.170	-0.170
	-3, 0			-0.07	. .	+1	. .	+0.16	. .	+19.5	+0.1	. .	. .
	-1, 0			. .	. .	. .	. .	. .	. .	. .	. .	+0.050	+0.050
8, -4,	0, -4			-0.24	. .	+6	. .	0.00	. .	0.0	. .	. .	. .
	-1, -3			+0.26	. .	-6	. .	-0.22	. .	-26.3	-0.1	. .	. .
	-2, -2			-0.10	. .	+3	. .	+0.18	. .	+20.9	+0.1	. .	. .
	-3, -1			+0.02	. .	0	. .	-0.05	. .	-5.5	. .	. .	. .
	0, -2			-0.03	. .	+1	. .	0.00	. .	0.0	. .	+0.018	+0.018
	-1, -1			+0.02	. .	0	. .	-0.02	. .	-2.0	. .	-0.011	-0.011

These values of the terms of long period have not been actually used in the construction of the tables, but, for the sake of greater rigor, the variations in question

were computed by mechanical quadratures for the epochs 1750, 1800, 1850, 1900, and 1950, and the results developed in powers of the time. It was intended that the constants of the elements should be so taken that the perturbations should vanish at the epoch 1900.0, but it was found more convenient to apply the last corrections to these perturbations than to the elements. Hence, as will be seen, they do not entirely vanish at the fundamental epoch.

Instead of the eccentricity and perihelion themselves, the perturbations actually computed were those of the rectangular quantities—

$$\begin{aligned} h &= e \sin \pi \\ k &= e \cos \pi \end{aligned}$$

π being reckoned from the fixed perihelion of 1900. Putting π_0 for the longitude of the latter, the actual values of Δh and Δk are—

$$\begin{aligned} \Delta h &= e \sin (\pi - \pi_0) \\ \Delta k &= e \cos (\pi - \pi_0) - e_0 \end{aligned}$$

e_0 being the eccentricity for 1900.0. Hence, the values of e and π at any epoch may be found by the equations—

$$\begin{aligned} e \sin (\pi - \pi_0) &= \Delta h \\ e \cos (\pi - \pi_0) &= \Delta k + e_0. \end{aligned}$$

The computation by mechanical quadratures, when developed in powers of the time, give the following values of the perturbations of long period, which are valid for one or more centuries from 1900, according to the degree of precision required.

For clearness, the secular variations are in these expressions given separately from those of long period, but both are combined in Table B, which gives the resulting values of the perturbations for 10-year intervals from 1600 to 2000.

$$\Delta l = +0''.41 + 0''.56 T - 22''.401 T^2 + 0''.014 T^3 + 0''.042 T^4$$

$$\begin{aligned} \Delta h &= +0''.12 - 17''.673 T + 0''.503 T^2 + 0''.159 T^3 + 0''.007 T^4 \\ \text{Sec. var.} &+ 0.687 T \end{aligned}$$

$$\begin{aligned} \Delta k &= -0''.17 + 12''.192 T + 1''.962 T^2 + 0''.027 T^3 - 0''.006 T^4 \\ \text{Sec. var.} &+ 1.061 T \end{aligned}$$

$$10^8 \frac{\Delta a}{a} = -47 + 4.030.0 T + 0.4 T^2 - 14.7 T^3 - 0.5 T^4$$

TABLE B.—*Secular and long-period variations of the mean longitude and elements of Neptune, to be applied to the values of the elements previously given in order to obtain the values at any epoch from 1600 to 2000.*

Date.	Δl	Δh	Δk	$10^8 \frac{\Delta a}{a}$
	"	"	"	
1600	-199.86	+51.88	23.49	-11773
1610	186.98	50.22	23.19	-11405
1620	-174.51	48.56	22.86	11034
1630	-162.45	46.89	22.50	-10660
1640	-150.81	45.21	-22.11	-10285
1650	-139.58	+43.52	-21.70	9908
1660	128.77	41.82	-21.25	-9529
1670	-118.38	40.11	20.77	-9148
1680	108.41	38.40	-20.26	-8766
1690	-98.87	36.67	19.72	-8381
1700	-89.76	+34.94	-19.14	-7996
1710	-81.07	33.21	-18.53	-7608
1720	-72.82	31.47	-17.89	-7219
1730	-65.00	29.72	-17.21	-6829
1740	-57.62	27.88	-16.50	-6437
1750	-50.67	+26.23	-15.76	-6044
1760	-44.16	24.48	-14.98	-5650
1770	-38.09	22.72	-14.16	-5255
1780	-32.46	20.97	-13.31	-4858
1790	-27.27	19.21	-12.42	-4461
1800	-22.53	+17.46	-11.49	-4062
1810	-18.23	15.70	-10.52	-3663
1820	-14.37	13.95	-9.53	-3264
1830	-10.96	12.20	-8.50	-2863
1840	-7.99	10.46	-7.42	-2462
1850	-5.47	+8.72	-6.31	-2060
1860	-3.40	6.99	-5.16	-1658
1870	-1.78	5.26	-3.97	-1256
1880	0.60	3.54	-2.74	-853
1890	+0.13	1.82	-1.48	-450
1900	+0.41	+0.12	-0.17	-47
1910	+0.24	-1.57	+1.17	+356
1920	-0.38	-3.26	+2.56	+759
1930	-1.44	-4.93	+3.98	+1162
1940	-2.95	-6.58	+5.44	+1564
1950	4.91	-8.23	+6.95	+1966
1960	-7.32	-9.86	+8.49	+2368
1970	-10.17	-11.47	+10.07	+2769
1980	-13.46	-13.06	+11.70	+3169
1990	-17.20	-14.64	+13.36	+3569
2000	-21.38	-16.20	+15.07	+3968

The change in the absolute position of the plane of the orbit of Neptune is so slight, little more than 1" per century, that the usual formulæ have been used in

determining it. The secular motions of this plane for the three epochs—1750, 1850, and 1950—are as follows: where

D_0^i denotes the centennial change due to the absolute motion of the plane of the orbit of Neptune,

D_1^i that due to the motion of the ecliptic,

D_t^i the total motion relative to the ecliptic:

Epoch	D_0^i	D_1^i	D_t^i	$\sin i D_0^i \theta$	$\sin i D_1^i \theta$	$\sin i D_t^i \theta$
	"	"	"	"	"	"
1750	+0.797—34.212	—33.415	—0.682—32.516	—33.198		
1850	+0.801—34.269	—33.468	—0.678—32.356	—33.034		
1950	+0.804—34.326	—33.522	—0.674—32.198	—32.872		

To the results of these motions have been added the terms of long period produced by the action of Uranus with the results shown in Tables I to III.

From the value of the eccentricity for 1900 are derived the following expressions for the equation of the center and for the logarithm of the radius vector in the elliptic orbit:

$$\begin{aligned}
 E &= + 3 \ 520.252 \sin g \\
 &\quad + \ 18.774 \sin 2g \\
 &\quad + \ 0.139 \sin 3g \\
 \log r &= \log a + 0.000 \ 007 \ 90 \\
 &\quad - 0.003 \ 705 \ 91 \cos g \\
 &\quad - 0.000 \ 023 \ 72 \cos 2g \\
 &\quad - 0.000 \ 000 \ 19 \cos 3g
 \end{aligned}$$

All the perturbations, secular and periodic, have been computed with the following masses of the disturbing planets:

$$\begin{aligned}
 \text{Jupiter;} \quad m &= 1 \div 1 \ 047.35 \\
 \text{Saturn;} \quad &1 \div 3 \ 501.6 \\
 \text{Uranus;} \quad &1 \div 22 \ 869
 \end{aligned}$$

The periodic perturbations of the coordinates of Neptune by the three disturbing planets are given in Tables C and D.

In Table C the arguments g' and g are the mean anomalies of Neptune and Uranus, respectively, reckoned from the adopted fixed perihelia of 1900, of which the adopted longitudes were—

$$\begin{aligned}
 \text{Neptune;} \quad \pi'_0 &= 43^\circ \ 40' \ 59.0'' \\
 \text{Uranus;} \quad \pi_0 &= 169^\circ \ 2' \ 31.4''
 \end{aligned}$$

The deviation of this value of π'_0 from that already given as definitive arises from the fact that in computing the perturbations the older elements of Neptune had to be used.

The perturbations are expressed in the form:

$$\begin{aligned}
 \text{Perturbation of longitude} &= v_c \cos A + v_s \sin A \\
 \text{Perturbation of } \log r &= \rho_c \cos A + \rho_s \sin A \\
 \text{Perturbation of latitude} &= b_c \cos A + b_s \sin A
 \end{aligned}$$

A being the argument at the left of the table.

In Table D the perturbations by Saturn and Jupiter are given in terms of arguments of a more general form, in which the values of the mean longitudes and perihelia may be used for any epoch.

Periodic perturbations of Neptune.

TABLE C.—Action of Uranus.

g'	g	v_c	v_s	$10^7 \times \rho_c$	$10^7 \times \rho_s$	b_c	b_s
		"	"			"	"
0	0	.	.	.	.	+0.018	.
1		+0.182	+0.318	+ 5	— 8	+0.093	+0.038
2		—0.015	+0.003	0	— 1	—0.016	+0.008
— 1	— 1	+0.005	—0.005	.	.	+0.006	—0.004
0		—0.131	—0.346	— 6	+ 1	—0.007	+0.005
+ 1		—2.208	—1.571	—168	+236	+0.002	+0.015
2		+4.168	—1.080	— 7	— 49	—0.243	+0.161
3		+0.126	—0.162	+ 3	— 2	—0.003	+0.014
4		+0.002	—0.001	.	.	—0.002	0.000
0	— 2	+0.001	+0.001	.	.	0.000	+0.005
+ 1		+0.232	+0.068	— 2	0	+0.035	+0.038
2		+8.649	—2.931	— 48	—140	+0.026	+0.007
3		—4.618	+9.262	+ 55	+ 28	0.000	—0.054
4		+0.218	+0.779	+ 5	— 2	—0.037	—0.040
5		+0.032	+0.020	.	.	—0.002	0.000
+ 1	— 3	+0.003	+0.002	.	.	.	.
2		+0.024	+0.005	0	0	—0.020	—0.003
3		—0.489	+1.750	+ 34	+ 10	—0.009	+0.007
4		+0.860	+1.652	+ 26	— 13	—0.047	—0.031
5		—1.610	—0.492	— 3	+ 10	+0.012	—0.002
6		—0.104	+0.053	.	.	+0.005	—0.007
+ 2	— 4	+0.001	0.000	.	.	.	.
3		—0.008	+0.020	0	0	+0.005	—0.009
4		—0.354	—0.440	— 9	+ 7	0.000	—0.006
5		—0.410	—0.052	— 1	+ 8	+0.011	—0.005
6		—0.259	+0.199	+ 3	+ 4	+0.007	—0.013
7		+0.095	—0.111	.	.	.	.
+ 4	— 5	—0.009	—0.012	.	.	+0.002	+0.004
5		+0.216	—0.014	0	— 5	+0.002	0.000
6		+0.099	—0.107	— 2	— 2	—0.002	+0.005
7		—0.001	—0.075	— 1	0	+0.002	+0.003
8		+0.001	—0.011	.	.	.	.
+ 4	— 6	0.000	—0.001	.	.	.	.
5		+0.010	0.000	0	0	—0.002	0.000
6		—0.050	+0.079	+ 2	+ 1	0.000	0.000
7		+0.014	+0.063	+ 1	0	0.000	—0.002
8		+0.024	+0.016	.	.	—0.002	0.000
+ 6	— 7	—0.003	+0.005	.	.	.	.
7		—0.016	—0.039	— 1	0	.	.
8		—0.027	—0.011	0	+ 1	.	.
9		—0.012	+0.004	.	.	.	.

Periodic perturbations of Neptune—Continued.

TABLE C.—Action of Uranus—Continued.

g'	g	v_c	v_s	$10^7 \times \rho_c$	$10^7 \times \rho_s$	b_c	b_s
		"	"			"	"
+ 7 — 8		—0.001	—0.003	.	.	.	.
8		+0.021	+0.004	.	.	.	.
9		+0.014	—0.008	.	.	.	.
10		+0.003	—0.007	.	.	.	.
+ 9 — 9		—0.009	+0.007	.	.	.	.
10		0.000	+0.007	.	.	.	.
+ 10 — 10		—0.001	—0.007	.	.	.	.

TABLE D.—Action of Saturn and Jupiter

Argument.	Action of Saturn.		Action of Jupiter.	
	$\delta v'$	$10^7 \delta \log r'$	$\delta v'$	$10^7 \delta \log r'$
	sin "	cos	sin "	cos
$l' - l$	—18.552	+397	—34.138	+701
$2l' - 2l$	+ 0.141	+ 4	+ 0.019	+ 1
$3l' - 3l$	+ 0.012	0	+ 0.003	0
$-l' + l - \pi' + \pi$	+ 0.002	0	0.000	0
$2l' - 2l - \pi' + \pi$	— 0.006	0	— 0.009	0
$-l' + 2l - \pi$	+ 0.523	+ 9	+ 0.803	+ 18
$l - \pi$	+ 0.008	+ 2	+ 0.003	0
$l' - \pi$	+ 1.316	— 34	+ 2.364	— 51
$2l' - l - \pi$	— 0.279	— 7	— 0.010	0
$3l' - 2l - \pi$	— 0.023	— 1	0.000	0
$4l' - 3l - \pi$	— 0.004	0	0.000	0
$l - \pi'$	— 0.081	— 1	— 0.144	— 2
$l' - \pi'$	+ 0.137	0	+ 0.118	— 2
$2l' - l - \pi'$	— 0.230	+ 5	— 0.435	+ 7
$3l' - 2l - \pi'$	+ 0.008	0	0.000	0
$4l' - 3l - \pi'$	+ 0.001	0	0.000	0
$-l' + 3l - 2\pi$	+ 0.022	0	+ 0.030	0
$l' + l - 2\pi$	— 0.008	0	— 0.011	0
$2l' - 2\pi$	+ 0.004	0	+ 0.004	0
$3l' - l - 2\pi$	+ 0.037	0	0.000	0
$2l - \pi' - \pi$	— 0.002	0	— 0.005	0
$l' + l - \pi' - \pi$	— 0.002	0	0.000	0
$2l' - \pi' - \pi$	+ 0.020	0	+ 0.028	0
$3l' - l - \pi' - \pi$	— 0.029	0	0.000	0
$2l' - 2\pi'$	+ 0.005	0	0.000	0
$3l' - l - 2\pi'$	+ 0.006	0	0.000	0

TABLE D.—Action of Saturn and Jupiter—Continued.

Argument.	Action of Saturn. Action of Jupiter.	
	$\delta\beta$	$\delta\beta$
	\sin "	\sin "
λ	+0.309	+0.564
λ'	+0.045	+0.039
$2\lambda'$	-0.005	0.000

Here λ and λ' are the mean angular distances of Saturn (or Jupiter) and Neptune from the ascending node of the disturbing on the disturbed planet.

These perturbations to be tabulated are reduced to the general form—

$$(v. c. 0) + (v. s. 1) \sin g' + (v. c. 1) \cos g' \\ + (v. s. 2) \sin 2g' + (v. c. 2) \cos 2g' \\ + \dots$$

where the coefficients ($v. c. 0$), etc., are so taken as to depend only on the argument $g - g'$, or $l_1 - g'$, l_1 being the mean longitude of Uranus from the perihelion of Neptune.

TABLE E.—Coefficients expressing the perturbations of Neptune by Uranus, Saturn, and Jupiter.

ACTION OF URANUS.

Arg. $g - g'$	(v. c. 0)		(v. s. 1)		(v. c. 1)		(v. s. 2)		(v. c. 2)	
	\sin	\cos	\sin	\cos	\sin	\cos	\sin	\cos	\sin	\cos
0	"	"	"	"	"	"	"	"	"	"
1	+1.571	-2.208	+4.299	0.734	+1.426	+4.037	+0.121	-0.157	+0.167	+0.131
2	+2.931	+8.649	+4.850	+9.194	-9.330	-4.386	+0.217	+0.778	0.780	+0.219
3	-1.750	-0.489	+0.836	+1.647	-1.657	+0.884	-1.613	-0.494	+0.490	-1.607
4	+0.440	-0.354	-0.402	-0.072	+0.032	-0.418	-0.260	+0.199	-0.199	-0.258
5	+0.014	+0.216	+0.108	-0.095	+0.119	+0.090	-0.001	-0.075	+0.075	-0.001
6	-0.079	-0.050	+0.004	+0.063	0.063	+0.024	+0.024	+0.017	-0.015	+0.024
7	+0.039	-0.016	-0.024	-0.016	+0.006	-0.030	-0.012	+0.004	-0.004	-0.012
8	-0.004	+0.021	+0.015	-0.005	+0.011	+0.013	+0.003	-0.007	+0.007	+0.003
9	-0.007	-0.009	0.000	+0.007	-0.007	0.000	.	.	.	.
10	+0.007	-0.001	.	.	.	.	.	.	.	.

Arg. $g - g'$	(v. s. 3)		(v. c. 3)		(\rho. c. 0)		(\rho. s. 1)		(\rho. c. 1)	
	\sin	\cos	\sin	\cos	\sin	\cos	\sin	\cos	\sin	\cos
0	"	"	"	"	.	.	.	-10	.	+8
1	+0.002	-0.001	+0.001	+0.002	-236	-168	-1	-50	+48	-13
2	+0.032	+0.020	-0.020	+0.032	+140	-48	+57	+28	-28	+53
3	-0.104	+0.053	-0.053	-0.104	-10	+34	+26	-13	+13	+26
4	+0.095	-0.111	+0.111	+0.095	-7	-9	-1	+8	-8	-1
5	+0.001	-0.011	+0.011	+0.001	+5	0	-2	-2	+2	-2
6	.	.	.	.	-1	+2	+1	0	0	+1
7	.	.	.	.	0	-1	0	+1	-1	0

TABLE E.—Coefficients expressing the perturbations of Neptune by Uranus, Saturn, and Jupiter—Continued.

ACTION OF URANUS.—Continued.

Arg. $g-g'$	(p. s. 2)		(p. c. 2)		(b. c. 0)		(b. s. 1)		(b. c. 1)	
	sin	cos	sin	cos	sin	cos	sin	cos	sin	cos
0	. .	— 1	. .	. .	"	"	"	"	"	"
1	+ 3	— 2	+ 2	+ 3	—0.015	+0.002	—0.236	+0.156	—0.166	—0.250
2	+ 5	— 2	+ 2	+ 5	—0.007	+0.026	—0.035	0.092	+0.016	+0.035
3	— 3	+10	—10	— 3	—0.007	—0.009	—0.027	—0.028	+0.034	—0.067
4	+ 3	+ 4	— 4	+ 3	+0.006	0.000	+0.006	+0.004	+0.014	+0.016
5	— 1	0	0	— 1	0.000	+0.002	—0.004	+0.001	—0.009	0.000
6	. .	. .	. .	. .	0.000	0.000	+0.002	—0.002	+0.002	—0.002

Arg. $g-g'$	(b. s. 2)		(b. c. 2)		(b. s. 3)		(b. c. 3)			
	sin	cos	sin	cos	sin	cos	sin	cos		
0	"	"	"	"	"	"	"	"		
1	—0.009	+0.018	—0.010	+0.003	—0.002	0.000	0.000	—0.002	. .	. .
2	—0.037	—0.045	+0.035	—0.037	—0.002	0.000	0.000	—0.002	. .	. .
3	+0.012	—0.002	+0.002	+0.012	+0.005	—0.007	+0.007	+0.005	. .	. .
4	+0.007	—0.013	+0.013	+0.007	. .	. .	. .	. .	. .	. .
5	+0.002	+0.003	—0.003	+0.002	. .	. .	. .	. .	. .	. .
6	—0.002	0.000	0.000	—0.002	. .	. .	. .	. .	. .	. .

ACTION OF SATURN.

Arg. l_1-g'	(v. c. 0)		(v. s. 1)		(v. c. 1)		(v. s. 2)		(v. c. 2)	
	sin	cos	sin	cos	sin	cos	sin	cos	sin	cos
0	"	"	"	"	"	"	"	"	"	"
1	+18.553	+0.001	+0.212	—0.494	+0.344	+0.200	—0.025	—0.018	+0.016	—0.005
2	— 0.137	—0.004	+0.402	+0.346	+0.362	—0.368	—0.002	—0.001	—0.001	+0.002
3	— 0.012	. .	+0.003	—0.002	+0.002	+0.003	+0.022	—0.002	—0.002	—0.022

Arg. l_1-g'	(p. c. 0)		(p. s. 1)		(p. c. 1)		(b. s. 1)		(b. c. 1)	
	sin	cos	sin	cos	sin	cos	sin	cos	sin	cos
0	. .	. .	. .	—15	. .	—12	"	"	"	"
1	0	+397	0	— 3	+7	0	+0.181	+0.249	+0.257	—0.175
2	0	+ 4	—7	+ 6	+8	+ 5	. .	. .	. .	. .

TABLE E.—*Coefficients expressing the perturbations of Neptune by Uranus, Saturn, and Jupiter—Continued.*

ACTION OF JUPITER.

Arg. $l_1 - g'$	(v. c. 0)		(v. s. 1)		(v. c. 1)		(v. s. 2)		(v. c. 2)	
	sin	cos	sin	cos	sin	cos	sin	cos	sin	cos
0	"	"	"	"	"	"	"	"	"	"
1	+34.138	0.000	-0.007	-0.586	+0.302	-0.003	+0.010	-0.005	-0.005	-0.010
2	-0.011	+0.005	-0.413	+0.689	+0.689	+0.413	+0.003	0.004	-0.004	-0.003
3	-0.003	0.000	0.000	0.000	0.000	0.000	-0.026	+0.014	+0.014	+0.026

Arg. $l_1 - g'$	(p. c. 0)		(p. s. 1)		(p. c. 1)		(b. s. 1)		(b. c. 1)	
	sin	cos	sin	cos	sin	cos	sin	cos	sin	cos
0	.	.	.	+13	.	-23	"	"	"	"
1	0	+701	+9	0	0	+5	-0.413	+0.384	+0.384	+0.413
2	0	+1	-15	9	-9	+15	.	.	.	.

II. STATEMENT OF THE QUANTITIES CONTAINED IN EACH TABLE.

In Table I the values of the several arguments are given for the beginning of each fourth year from 1600 to 2000. The year is the tabular one used in the other tables, beginning with January 1, Greenwich mean noon, in leap years, and January 0 in other years. It will be noticed that all the years in Table I are leap years, except 1700, 1800, and 1900.

In this table l is the undisturbed mean longitude carried forward and backward from 1900, with its motion from the mean equinox for that date, the effect of perturbations and of the secular change in the precession being omitted. The expression tabulated is

$$l = 85^\circ 1' 30''.63 + 791\ 505''.84\ T$$

g is the mean anomaly of Neptune reckoned from the fixed perihelion of 1900, computed with the unchanged sidereal mean motion of that epoch. Its expression is

$$g = 41^\circ 16'.173 + 13\ 108'.007\ T$$

θ is the longitude of the node from the mean equinox of the date, affected both by its secular and long-period perturbations, and by the change arising from the motion of the ecliptic.

Arguments I, II, and III are those used in expressing the perturbations given in

Table E, preceding. The unit of each argument is $36'$, so that 600 units make a circumference. As thus expressed, the values of the arguments are

$$\begin{aligned}\text{Uranus;} & \quad \text{I} = g - g' \\ \text{Saturn;} & \quad \text{II} = l_1 - g' \\ \text{Jupiter;} & \quad \text{III} = l_1 - g'\end{aligned}$$

where g' is the mean anomaly of Neptune, as used in the tables of perturbations, and g that of Uranus, while l_1 in Arguments II and III expresses the mean longitude of Jupiter or Saturn reckoned from the perihelion of Neptune as the origin.

i is the inclination of the orbit of Neptune to the ecliptic of the date, affected by its secular motion and perturbations of long period.

Table II gives the reduction of the arguments, etc., to the beginning of each month in a four-year cycle. As the motions of θ and Arguments II and III are not uniform, the minute secular changes for a four-year period are here given under the caption $\Delta\theta$, ΔII , and ΔIII .

Table III contains the motions for days, and does not seem to need explanation.

Table IV gives the effect of the secular variations and terms of long period upon the arguments and the coefficients of the perturbations for every alternate year of the period 1600–2000.

δl is the perturbation of the mean longitude as given in Table B, preceding, with the addition of the term of precession depending on the square of the time, $1''.109 T^2$.

δg is the correction of the mean anomaly for the inequality of long period in the mean longitude.

The expressions for the several quantities found in the table are as follows:

$$\begin{aligned}\delta l &= \Delta l + 1''.109 T^2 \\ \delta g &= \Delta l \text{ in minutes} \\ (v. s. 1) &= + (2 - \frac{3}{4} e^2) \Delta k \\ (v. c. 1) &= - (2 - \frac{1}{4} e^2) \Delta h \\ (v. s. 2) &= + \frac{5}{2} e \Delta k \\ (v. c. 2) &= - \frac{5}{2} e \Delta h \\ (\rho. c. 0) &= \delta \log a + \frac{1}{2} M e \Delta k \\ (\rho. s. 1) &= - M (1 - \frac{3}{8} e^2) \Delta h \\ (\rho. c. 1) &= - M (1 - \frac{3}{8} e^2) \Delta k \\ (\rho. s. 2) &= - \frac{3}{2} M e \Delta h \\ (\rho. c. 2) &= - \frac{3}{2} M e \Delta k\end{aligned}$$

Table V gives the coefficients for computing the perturbations of the longitude and logarithm of the radius vector by Uranus. The expressions for these coefficients are found in Table E, preceding. No constants are added to the numbers, except in the case of $(\rho. c. 0)$.

Tables VI and VII give the values of the same coefficients produced by the action of Saturn and Jupiter.

The constants added to ($\rho. c. o$) are, in units of the seventh place,

Table V	const. = 20 0
Table VI	const. = 40 0
Table VII	const. = 70 0
Sum	130 0

This sum has been subtracted from the principal term of the logarithm of the radius vector as subsequently tabulated.

Table VIII gives the equation of the center and the principal term of the logarithm of the radius vector as computed from the expressions for these quantities already given. The logarithm of the radius vector is diminished by 1300 in units of the seventh place, to compensate for the constants added to ($\rho. c. o$) in the three preceding tables. The constant term of $\log r$ is formed thus:

$\log a$	1.478 143 14
$\frac{1}{4} e^2 \times \text{Modulus}$	+ 7 90
constants	- 130 00
constant term of $\log r$	1.478 021 04

Table IX gives the reduction to the ecliptic and its secular variation.

$$R = -49''.736 \sin 2 u + 0''.006 \sin 4 u$$

$$\text{Sec. var.} = + 0''.513 \sin 2 u$$

Tables X, XI, and XII give the coefficients for computing the latitude as tabulated from the expressions in Table E, preceding.

III. PRECEPTS FOR THE USE OF THE TABLES.

The date for which the position of Neptune is required is to be expressed in terms of the Gregorian calendar. The tables, as given in full, extend only through the period of 1600–2000. Should a position be required outside of these limits of time, it may be computed by means of the motions of the arguments.

Enter Table I with the year, or with the first preceding year found therein, and take out all the quantities of the table.

Enter Table II with the excess of the actual year over that with which Table I was entered, and with the month. Write the corresponding values of l , g , etc., under the values from Table I.

Enter Table III with the day of the month, except in January of a leap year, when it must be entered with a date one less than the actual day of the month, and February of 1700, 1800, and 1900, when it must be entered with a number one greater than the day of the month.

If the date is not an exact Greenwich mean noon, the number must be interpolated to the fraction of a day.

Enter Table IV with the date expressed in years and fractions; interpolate the numbers there found to the proper date of the year and write the values of l and g under those from the former tables.

The values (*v. c. 0*), (*v. s. 1*), etc., from this table are to be written down at the tops of columns with their respective designations.

The sum of the quantities thus found from Tables I to IV, diminished by multiples of the period (600 for Arg. I to III) when necessary, will be the arguments for use in the subsequent tables.

Enter Tables V, VI, and VII, with the respective Arguments I, II, III, and take out the values of the several coefficients (*v. c. 0*), etc., writing the quantities having the same designation under the corresponding ones from Table IV.

The sums of the partial quantities thus formed are designated (*v. c. 0*), (*v. s. 1*), etc. The final values of these sums are to be multiplied by the sines and cosines of the corresponding multiples of *g*, and the products are to be added together; that is, we are to form the quantity—

$$\begin{aligned}\delta v = & (v. c. 0) + (v. s. 1) \sin g + (v. c. 1) \cos g \\ & + (v. s. 2) \sin 2g + (v. c. 2) \cos 2g \\ & + \quad \text{etc.} \quad + \quad \text{etc.}\end{aligned}$$

$$\begin{aligned}\delta \log r = & (\rho. c. 0) + (\rho. s. 1) \sin g + (\rho. c. 1) \cos g \\ & + (\rho. s. 2) \sin 2g + (\rho. c. 2) \cos 2g \\ & + (\rho. s. 3) \sin 3g + (\rho. c. 3) \cos 3g.\end{aligned}$$

δv and $\delta \log r$ will then be the perturbations of longitude and of the common logarithm of the radius vector, the latter being expressed in units of the seventh decimal place.

Enter Table VIII with *g* as the argument and take out the values of *E* and $\log r_0$. Note that when the argument is to the right of the quantity taken out, *E* is negative, while $\log r_0$ remains unchanged.

The respective sums

$$\begin{aligned}v &= l + E + \delta v \\ \log r &= \log r_0 + \delta \log r\end{aligned}$$

will be the longitude of Neptune in the orbit, and the logarithm of its radius vector, respectively.

From *v* subtract θ , the longitude of the node. The remainder will be the argument of the latitude, which we designate as *u*.

Enter Table IX with *u* as the argument, take out the reduction *R* to the ecliptic with its appropriate sign, and correct it for the secular variation.

The sum *v* + *R* will be the ecliptic longitude of Neptune referred to the mean equinox of the date.

By adding the nutation we shall have the true longitude referred to the actual equinox.

Enter Tables X, XI, and XII with their respective arguments, take out the values of the coefficients, and add up those having corresponding designations.

The sum

$$\delta \beta = (b. c. 0) + (b. s. 1) \sin g + (b. c. 1) \cos g + \text{etc.}$$

will be the perturbations of the latitude of Neptune. The principal term of the latitude is to be computed by the formulæ

$$\sin \beta_0 = \sin i \sin u.$$

The value of i is that found from Tables I, II, and III.

The sum

$$\beta = \beta_0 + \delta\beta$$

will be the heliocentric latitude of Neptune with respect to the ecliptic of the date.

Example of the use of the tables.

As an example of the use of the tables we give the computation of the position of the planet for 1795, May 9, Greenwich mean noon, a mean epoch for LALANDE's two observations.

	<i>l</i>	<i>g</i>	<i>θ</i>	I	II	III	<i>i</i>
	° / "	° / "	° / "				° / "
Table I, 1792.....	207 35 7.66	165 20.243	129 29 25.6	276.95	294.76	586.27	1 47 21.02
II, 3 ^d , May 0.....	7 18 49.35	7 16.036	2 11.8	11.64	55.65	156.15	—1.10
III, Day 9.....	3 15.03	3.230	1.0	0.09	0.41	1.16	—0.01
IV, 1795.35.....	—23.46	—0.411	.	.	.	.	.
Arg., etc., for date.....	214 56 48.58	172 39.098	129 31 38.4	288.68	350.82	143.58	1 47 19.91

	(<i>v. c. 0</i>)	(<i>v. s. 1</i>)	(<i>v. c. 1</i>)	(<i>v. s. 2</i>)	(<i>v. c. 2</i>)	(<i>v. s. 3</i>)	(<i>v. c. 3</i>)	(<i>ρ. c. 0</i>)	(<i>ρ. s. 1</i>)	(<i>ρ. c. 1</i>)	(<i>ρ. s. 2</i>)	(<i>ρ. c. 2</i>)
	"	"	"	"	"	"	"					
Table IV	.	—23.86	—36.55	—0.25	—0.38	.	.	—185	—385	+251	—5	+3
V	+9.32	+10.34	—7.64	+1.11	+1.88	—0.21	+0.15	+225	+81	+70	—10	+6
VI	—9.53	+0.83	—0.21	+0.01	—0.01	.	.	+60	—15	—6	.	.
VII	+34.06	—0.79	—0.02	+0.04	—0.02	.	.	+746	+29	—39	.	.
Sum.....	+33.85	—13.48	—44.42	+0.91	+1.47	—0.21	+0.15	+846	—290	+276	—15	+9

<i>Longitude.</i>				<i>Log Radius Vector.</i>	
	°	'	"		
<i>l</i>	214	56	48.58	$\log r_0$	1.481 673 8
E	+	7	25.54	(<i>ρ. c. 0</i>)	+0.000 084 6
(<i>v. c. 0</i>)	+		33.85	(<i>ρ. s. 1</i>) $\sin g$	—0.000 003 7
(<i>v. s. 1</i>) $\sin g$	—		1.72	(<i>ρ. c. 1</i>) $\cos g$	—0.000 027 4
(<i>v. c. 1</i>) $\cos g$	+		44.06	(<i>ρ. s. 2</i>) $\sin 2g$	+0.000 000 4
(<i>v. s. 2</i>) $\sin 2g$	—		0.23	(<i>ρ. c. 2</i>) $\cos 2g$	+0.000 000 9
(<i>v. c. 2</i>) $\cos 2g$	+		1.42		
(<i>v. s. 3</i>) $\sin 3g$	—		0.08	$\log r$	1.481 728 6
(<i>v. c. 3</i>) $\cos 3g$	—		0.14		
Longitude in Orbit	215	5	31.28		
<i>θ</i>	129	31	38.4		
"	85	33	52.9		
R. Table IX	—		7.75		
Long. Mean Equinox	215	5	23.53		

TABLES OF NEPTUNE.

		<i>Latitude.</i>				
		(<i>b. c. 0</i>)	(<i>b. s. 1</i>)	(<i>b. c. 1</i>)	(<i>b. s. 2</i>)	(<i>b. c. 2</i>)
		"	"	"	"	"
Table	X	+0.04	-0.21	+0.42	-0.06	-0.08
	XI	. .	-0.27	0.00	. .	. .
	XII	. .	-0.35	+0.44	. .	. .
Sum		+0.04	-0.83	+0.86	-0.06	-0.08
		"				
(<i>b. c. 0</i>)	+0.04			log sin <i>i</i>		8.494 384
(<i>b. s. 1</i>) sin <i>g</i>	-0.11			log sin <i>u</i>		9.998 698
(<i>b. c. 1</i>) cos <i>g</i>	-0.85			log sin β_0		8.493 082
(<i>b. s. 2</i>) sin 2 <i>g</i>	+0.02					° / "
(<i>b. c. 2</i>) cos 2 <i>g</i>	-0.08					
$\delta\beta$	-0.98			β_0	+1 47	0.63
				$\delta\beta$	-	0.98
				Latitude	+1 46	59.65

TABLES.

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TABLE I.—*Epochs and arguments for every fourth year, 1600 to 2000.*

Year.	<i>l</i>	<i>g</i>	<i>0</i>	I	II	III	<i>i</i>
	° / "	° / "	° / "				° / "
1600	145 27 18.12	105 53.229	127 22 51.4	205.02	84.10	573.49	1 48 24.52
04	154 14 58.35	114 37.549	25 29.5	219.02	150.98	161.26	23.20
08	163 2 38.59	123 21.870	28 7.5	233.02	217.85	349.04	21.87
12	171 50 18.82	132 6.190	30 45.6	247.02	284.73	536.81	20.55
16	180 37 59.05	140 50.510	33 23.7	261.01	351.60	124.59	19.23
1620	189 25 39.29	149 34.830	127 36 1.8	275.01	418.48	312.36	1 48 17.90
24	198 13 19.52	158 19.151	38 39.9	289.01	485.35	500.13	16.58
28	207 0 59.76	167 3.471	41 17.9	303.00	552.23	87.91	15.26
32	215 48 39.99	175 47.791	43 56.1	317.00	19.11	275.68	13.93
36	224 36 20.22	184 32.112	46 34.2	331.00	85.98	463.46	12.61
1640	233 24 0.46	193 16.432	127 49 12.3	345.00	152.86	51.23	1 48 11.29
44	242 11 40.69	202 0.752	51 50.4	359.00	219.74	239.00	9.96
48	250 59 20.92	210 45.072	54 28.5	372.99	286.62	426.77	8.64
52	259 47 1.16	219 29.393	57 6.7	386.99	353.50	14.55	7.32
56	268 34 41.39	228 13.713	127 59 44.8	400.99	420.38	202.32	5.99
1660	277 22 21.62	236 58.033	128 2 23.0	414.99	487.26	390.09	1 48 4.67
64	286 10 1.86	245 42.353	5 1.1	428.99	554.14	577.86	3.35
68	294 57 42.09	254 26.674	7 39.3	442.98	21.02	165.63	2.02
72	303 45 22.32	263 10.994	10 17.4	456.98	87.91	353.41	1 48 0.70
76	312 33 2.56	271 55.314	12 55.6	470.98	154.79	541.18	1 47 59.38
1680	321 20 42.79	280 39.635	128 15 33.8	484.98	221.68	128.95	1 47 58.05
84	330 8 23.03	289 23.955	18 12.0	498.98	288.56	316.72	56.73
88	338 56 3.26	298 8.275	20 50.2	512.98	355.45	504.49	55.41
92	347 43 43.49	306 52.595	23 28.4	526.97	422.34	92.26	54.08
96	356 31 23.73	315 36.916	26 6.6	540.97	489.22	280.03	52.76
1700	5 18 42.29	324 20.877	128 28 44.8	554.96	556.06	467.67	1 47 51.44
04	14 6 22.52	333 5.197	31 23.0	568.96	22.96	55.44	50.12
08	22 54 2.76	341 49.518	34 1.3	582.96	89.85	243.21	48.80
12	31 41 42.99	350 33.838	36 39.5	596.96	156.74	430.97	47.47
16	40 29 23.22	359 18.158	39 17.7	10.96	223.63	18.74	46.15
1720	49 17 3.46	8 2.478	128 41 56.0	24.95	290.52	206.51	1 47 44.83
24	58 4 43.69	16 46.799	44 34.3	38.95	357.42	394.28	43.51
28	66 52 23.93	25 31.119	47 12.5	52.95	424.31	582.04	42.18
32	75 40 4.16	34 15.439	49 50.8	66.95	491.20	169.81	40.86
36	84 27 44.39	42 59.760	52 29.1	80.95	558.10	357.58	39.54
1740	93 15 24.63	51 44.080	128 55 7.4	94.95	25.00	545.34	1 47 38.22
44	102 3 4.86	60 28.400	128 57 45.6	108.95	91.90	133.11	36.89
48	110 50 45.09	69 12.720	129 0 23.9	122.95	158.80	320.88	35.57
52	119 38 25.33	77 57.041	3 2.2	136.95	225.70	508.64	34.25
56	128 26 5.56	86 41.361	5 40.5	150.95	292.60	96.41	32.93
1760	137 13 45.79	95 25.681	129 8 18.8	164.95	359.50	284.17	1 47 31.60
64	146 1 26.03	104 10.001	10 57.2	178.95	426.41	471.94	30.28
68	154 49 6.26	112 54.322	13 35.5	192.95	493.31	59.70	28.96
72	163 36 46.49	121 38.642	16 13.8	206.95	560.22	247.46	27.64
76	172 24 26.73	130 22.962	18 52.2	220.95	27.12	435.22	26.31
1780	181 12 6.96	139 7.283	129 21 30.5	234.95	94.03	22.99	1 47 24.99
84	189 59 47.20	147 51.603	24 8.8	248.95	160.94	210.75	23.67
88	198 47 27.43	156 35.923	26 47.2	262.95	227.85	398.51	22.35
92	207 35 7.66	165 20.243	29 25.6	276.95	294.76	586.27	21.02
96	216 22 47.90	174 4.564	32 3.9	290.95	361.67	174.03	19.70
1800	225 10 6.46	182 48.525	129 34 42.3	304.94	428.54	361.66	1 47 18.38

TABLE I.—*Epochs and arguments for every fourth year, 1600 to 2000.*

Year.	<i>l</i>			<i>g</i>		<i>0</i>			<i>I</i>	<i>II</i>	<i>III</i>	<i>i</i>		
	°	'	"	°	'	°	'	"				°	'	"
1800	225	10	6.46	182	48.525	129	34	42.3	304.94	428.54	361.66	1	47	18.38
04	233	57	46.69	191	32.845		37	20.7	318.94	495.45	549.42			17.06
08	242	45	26.93	200	17.166		39	59.1	332.94	562.37	137.18			15.74
12	251	33	7.16	209	1.486		42	37.5	346.94	29.28	324.94			14.41
16	260	20	47.39	217	45.806		45	15.9	360.94	96.20	512.70			13.09
1820	269	8	27.63	226	30.126	129	47	54.3	374.94	163.12	100.46	1	47	11.77
24	277	56	7.86	235	14.447		50	32.7	388.94	230.04	288.22			10.45
28	286	43	48.10	243	58.767		53	11.1	402.95	296.96	475.98			9.12
32	295	31	28.33	252	43.087		55	49.6	416.95	363.88	63.74			7.80
36	304	19	8.56	261	27.408	129	58	28.0	430.95	430.80	251.49			6.48
1840	313	6	48.80	270	11.728	130	1	6.5	444.95	497.72	439.25	1	47	5.16
44	321	54	29.03	278	56.048		3	44.9	458.95	564.64	27.01			3.83
48	330	42	9.26	287	40.368		6	23.4	472.95	31.56	214.76			2.51
52	339	29	49.50	296	24.689		9	1.9	486.95	98.49	402.52	1	47	1.19
56	348	17	29.73	305	9.009		11	40.3	500.95	165.42	590.28	1	46	59.87
1860	357	5	9.96	313	53.329	130	14	18.8	514.96	232.34	178.03	1	46	58.54
64	5	52	50.20	322	37.649		16	57.3	528.96	299.27	365.79			57.22
68	14	40	30.43	331	21.970		19	35.8	542.96	366.20	553.54			55.90
72	23	28	10.66	340	6.290		22	14.3	556.96	433.13	141.30			54.58
76	32	15	50.90	348	50.610		24	52.8	570.96	500.06	329.05			53.25
1880	41	3	31.13	357	34.931	130	27	31.3	584.96	566.99	516.80	1	46	51.93
84	49	51	11.37	6	19.251		30	9.8	598.97	33.92	104.56			50.61
88	58	38	51.60	15	3.571		32	48.4	12.97	100.86	292.31			49.29
92	67	26	31.83	23	47.891		35	26.9	26.97	167.79	480.06			47.96
96	76	14	12.07	32	32.212		38	5.4	40.97	234.72	67.82			46.64
1900	85	1	30.63	41	16.173	130	40	44.0	54.97	301.61	255.44	1	46	45.32
04	93	49	10.86	50	0.493		43	22.6	68.97	368.55	443.19			44.00
08	102	36	51.10	58	44.814		46	1.1	82.97	435.49	30.95			42.67
12	111	24	31.33	67	29.134		48	39.7	96.98	502.42	218.70			41.35
16	120	12	11.56	76	13.454		51	18.3	110.98	569.36	406.45			40.03
1920	128	59	51.80	84	57.774	130	53	56.9	124.98	36.30	594.20	1	46	38.70
24	137	47	32.03	93	42.095		56	35.5	138.98	103.24	181.95			37.38
28	146	35	12.27	102	26.415	130	59	14.1	152.99	170.18	369.70			36.05
32	155	22	52.50	111	10.735	131	1	52.7	166.99	237.12	557.45			34.73
36	164	10	32.73	119	55.056		4	31.3	180.99	304.06	145.20			33.41
1940	172	58	12.97	128	39.376	131	7	10.0	195.00	371.00	332.95	1	46	32.08
44	181	45	53.20	137	23.696		9	48.6	209.00	437.94	520.70			30.76
48	190	33	33.43	146	8.016		12	27.3	223.00	504.89	108.45			29.44
52	199	21	13.67	154	52.337		15	5.9	237.00	571.83	296.20			28.11
56	208	8	53.90	163	36.657		17	44.6	251.01	38.77	483.95			26.79
1960	216	56	34.13	172	20.977	131	20	23.2	265.01	105.72	71.70	1	46	25.47
64	225	44	14.37	181	5.297		23	1.9	279.02	172.66	259.45			24.14
68	234	31	54.60	189	49.618		25	40.6	293.02	239.60	447.20			22.82
72	243	19	34.83	198	33.938		28	19.3	307.02	306.55	34.95			21.50
76	252	7	15.07	207	18.258		30	58.0	321.03	373.50	222.70			20.17
1980	260	54	55.30	216	2.579	131	33	36.7	335.03	440.44	410.45	1	46	18.85
84	269	42	35.54	224	46.899		36	15.4	349.04	507.39	598.20			17.52
88	278	30	15.77	233	31.219		38	54.1	363.04	574.33	185.95			16.20
92	287	17	56.00	242	15.539		41	32.8	377.04	41.28	373.70			14.88
96	296	5	36.24	250	59.860		44	11.5	391.05	108.23	561.45			13.55
2000	304	53	16.47	259	44.180	131	46	50.3	405.05	175.17	149.19	1	46	12.23

TABLE II.—*Reduction to beginning of months in four-year cycles.*

	<i>l</i>			<i>g</i>		θ		$\Delta\theta$	I	II	Δ II	III	Δ III	<i>i</i>
<i>Year 0.</i>	°	'	"	°	'	'	"	"						"
Jan. 1*	0	0	0.00	0	0.000	0	0.0	0.0	0.00	0.00	0.00	0.00	0.00	0.00
Feb. 0*	10	50.11		10.766		3.3		0.0	0.29	1.38	0.00	3.86	0.00	-0.03
Mar. 0	21	18.54		21.174		6.4		0.0	0.57	2.70	0.00	7.58	0.00	-0.05
Apr. 0	32	30.32		32.299		9.8		0.0	0.86	4.12	0.00	11.56	0.00	-0.08
May 0	43	20.43		43.065		13.0		0.0	1.15	5.50	0.00	15.42	0.00	-0.11
June 0	0	54.32.21		0 54.191		0 16.4		0.0	1.45	6.92	0.00	19.40	0.00	-0.14
July 0	1	5 22.32		1 4.957		0 19.6		0.0	1.73	8.29	0.00	23.26	0.00	-0.16
Aug. 0	16	34.09		16.082		23.0		0.0	2.03	9.71	0.00	27.24	0.00	-0.19
Sept. 0	27	45.87		27.207		26.4		0.0	2.33	11.13	0.00	31.23	0.00	-0.22
Oct. 0	38	35.98		37.974		29.6		0.0	2.62	12.51	0.00	35.08	0.00	-0.25
Nov. 0	1	49 47.76		49.099		33.0		0.0	2.91	13.93	0.00	39.07	0.00	-0.28
Dec. 0	2	0 37.86		1 59.865		0 36.2		0.0	3.20	15.30	0.00	42.92	0.00	-0.30
<i>Year 1.</i>														
Jan. 0	2	11 49.64		2 10.990		0 39.6		0.0	3.50	16.72	0.00	46.90	0.00	-0.33
Feb. 0	23	1.42		22.116		43.0		0.0	3.79	18.14	0.00	50.89	0.00	-0.36
Mar. 0	33	8.19		32.164		46.0		+0.1	4.06	19.43	0.00	54.49	0.00	-0.38
Apr. 0	44	19.96		43.289		49.4		+0.1	4.36	20.85	0.00	58.47	0.00	-0.41
May 0	2	55 10.07		2 54.056		52.6		+0.1	4.65	22.22	+0.01	62.33	0.00	-0.44
June 0	3	6 21.85		3 5.181		0 56.0		+0.1	4.94	23.64	+0.01	66.31	0.00	-0.47
July 0	3	17 11.96		3 15.947		0 59.3		+0.1	5.23	25.02	+0.01	70.16	0.00	-0.49
Aug. 0	28	23.73		27.072		1 2.6		+0.1	5.53	26.44	+0.01	74.15	0.00	-0.52
Sept. 0	39	35.51		38.198		6.0		+0.1	5.83	27.86	+0.01	78.13	0.00	-0.55
Oct. 0	3	50 25.62		3 48.964		9.2		+0.1	6.11	29.23	+0.01	81.99	0.00	-0.58
Nov. 0	4	1 37.40		4 0.089		12.6		+0.1	6.41	30.65	+0.01	85.97	0.00	-0.61
Dec. 0	4	12 27.50		4 10.856		1 15.9		+0.1	6.70	32.02	+0.01	89.83	0.00	-0.63
<i>Year 2.</i>														
Jan. 0	4	23 39.28		4 21.981		1 19.2		+0.1	7.00	33.44	+0.01	93.81	0.00	0.66
Feb. 0	34	51.06		33.106		22.6		+0.1	7.29	34.87	+0.01	97.80	0.00	-0.69
Mar. 0	44	57.83		43.154		25.6		+0.1	7.56	36.15	+0.01	101.39	0.00	-0.71
Apr. 0	4	56 9.60		4 54.280		29.0		+0.1	7.86	37.57	+0.01	105.38	0.00	-0.74
May 0	5	6 59.71		5 5.046		32.3		+0.1	8.15	38.94	+0.01	109.23	0.00	-0.77
June 0	5	18 11.49		5 16.171		1 35.6		+0.1	8.44	40.36	+0.01	113.22	0.00	-0.80
July 0	5	29 1.60		5 26.938		1 38.9		+0.1	8.73	41.74	+0.01	117.07	0.00	-0.83
Aug. 0	40	13.38		38.063		42.2		+0.1	9.03	43.16	+0.01	121.06	0.00	-0.85
Sept. 0	5	51 25.15		49.188		45.6		+0.1	9.32	44.58	+0.01	125.04	0.00	-0.88
Oct. 0	6	2 15.26		5 59.954		48.9		+0.1	9.61	45.95	+0.01	128.89	0.00	-0.91
Nov. 0	13	27.04		6 11.080		52.2		+0.1	9.91	47.37	+0.01	132.88	0.00	-0.94
Dec. 0	6	24 17.15		6 21.846		1 55.5		+0.1	10.20	48.75	+0.01	136.73	0.00	-0.96
<i>Year 3.</i>														
Jan. 0	6	35 28.92		6 32.971		1 58.8		+0.1	10.49	50.17	+0.01	140.72	0.00	-0.99
Feb. 0	46	40.70		44.096		2 2.2		+0.1	10.78	51.59	+0.01	144.70	0.00	-1.02
Mar. 0	6	56 47.47		6 54.145		5.2		+0.1	11.06	52.87	+0.01	148.30	0.01	-1.05
Apr. 0	7	7 59.25		7 5.270		8.6		+0.1	11.36	54.29	+0.01	152.28	0.01	-1.07
May 0	18	49.35		16.036		11.9		+0.1	11.64	55.66	+0.01	156.14	-0.01	-1.10
June 0	7	30 1.13		7 27.162		2 15.2		+0.1	11.94	57.08	+0.01	160.12	-0.01	-1.13
July 0	7	40 51.24		7 37.928		2 18.5		+0.2	12.23	58.46	+0.01	163.98	-0.01	-1.16
Aug. 0	7	52 3.02		7 49.053		21.8		+0.2	12.53	59.88	+0.01	167.96	-0.01	-1.18
Sept. 0	8	3 14.79		8 0.178		25.2		+0.2	12.82	61.30	+0.01	171.94	-0.01	-1.21
Oct. 0	14	4.90		10.945		28.5		+0.2	13.11	62.67	+0.01	175.80	-0.01	-1.24
Nov. 0	25	16.68		22.070		31.8		+0.2	13.41	64.10	+0.02	179.78	-0.01	-1.27
Dec. 0	8	36 6.79		8 32.836		2 35.1		+0.2	13.70	65.47	+0.02	183.64	-0.01	-1.29

$\Delta\theta$, Δ II, and Δ III are the changes in the motions of θ , II, and III for 100 years. They are to be multiplied by the time after 1900, expressed in terms of the century as unit, and added to θ , II, and III, respectively.

* The first two dates under year 0, should, in the years 1700, 1800, and 1900, be regarded as January 0 and February -1.

TABLE III.—*Motions of arguments, etc., for days.*

Days.	<i>l</i>	<i>g</i>	<i>θ</i>	I	II	III	<i>i</i>
	' "	' "					"
1	0 21.67	0.359	0.1	0.01	0.05	0.13	0.00
2	0 43.34	0.718	0.2	0.02	0.09	0.26	0.00
3	1 5.01	1.077	0.3	0.03	0.14	0.39	0.00
4	1 26.68	1.436	0.4	0.04	0.18	0.51	0.00
5	1 48.35	1.794	0.5	0.05	0.23	0.64	0.00
6	2 10.02	2.153	0.7	0.06	0.27	0.77	—0.01
7	2 31.69	2.512	0.8	0.07	0.32	0.90	—0.01
8	2 53.36	2.871	0.9	0.08	0.37	1.03	—0.01
9	3 15.03	3.230	1.0	0.09	0.41	1.16	—0.01
10	3 36.70	3.589	1.1	0.10	0.46	1.29	—0.01
11	3 58.37	3.948	1.2	0.11	0.50	1.41	—0.01
12	4 20.04	4.307	1.3	0.11	0.55	1.54	—0.01
13	4 41.71	4.665	1.4	0.12	0.60	1.67	—0.01
14	5 3.38	5.024	1.5	0.13	0.64	1.80	—0.01
15	5 25.05	5.383	1.6	0.14	0.69	1.93	—0.01
16	5 46.72	5.742	1.7	0.15	0.73	2.06	—0.01
17	6 8.39	6.101	1.8	0.16	0.78	2.18	—0.01
18	6 30.06	6.460	2.0	0.17	0.82	2.31	—0.02
19	6 51.73	6.819	2.1	0.18	0.87	2.44	—0.02
20	7 13.40	7.178	2.2	0.19	0.92	2.57	—0.02
21	7 35.08	7.536	2.3	0.20	0.96	2.70	—0.02
22	7 56.75	7.895	2.4	0.21	1.01	2.83	—0.02
23	8 18.42	8.254	2.5	0.22	1.05	2.96	—0.02
24	8 40.09	8.613	2.6	0.23	1.10	3.08	—0.02
25	9 1.76	8.972	2.7	0.24	1.14	3.21	—0.02
26	9 23.43	9.331	2.8	0.25	1.19	3.34	—0.02
27	9 45.10	9.690	2.9	0.26	1.24	3.47	—0.03
28	10 6.77	10.049	3.0	0.27	1.28	3.60	—0.03
29	10 28.44	10.408	3.1	0.28	1.33	3.73	—0.03
30	10 50.11	10.766	3.3	0.29	1.38	3.86	—0.03
31	11 11.78	11.125	3.4	0.30	1.42	3.98	—0.03

For a date in January of a leap year, that is, of all zero years of the four-year cycle except 1700, 1800, and 1900, Table III should be entered with a number 1 less than the day of the month.

In February, 1700, 1800, and 1900, Table III should be entered with a number 1 greater than the day of the month. The period of Arguments I, II, and III is 600.

TABLE IV.—*Secular terms and terms of long period, 1600–2000.*

Year.	δl	δg	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(p. c. o)	(p. s. 1)	(p. c. 1)	(p. s. 2)	(p. c. 2)
	"	'	"	"	"	"					
1600	—189.88	—3.331	—46.96	—103.76	—0.49	—1.09	—513	—1092	+494	—14	+6
02	187.40	3.287	46.85	103.10	0.49	1.08	510	1086	492	14	6
04	184.94	3.244	46.73	102.44	0.49	1.08	507	1079	491	13	6
06	182.49	3.201	46.61	101.78	0.48	1.07	503	1072	490	13	6
08	180.06	3.158	46.49	101.11	0.48	1.06	500	1065	489	13	6
1610	177.65	—3.116	—46.37	—100.45	—0.48	—1.05	—497	—1058	+488	13	+6
12	175.25	3.074	46.24	99.78	0.48	1.05	494	1051	486	13	6
14	172.87	3.032	46.11	99.12	0.48	1.04	490	1044	485	13	6
16	170.51	2.990	45.98	98.45	0.48	1.03	487	1037	484	13	6
18	168.16	2.949	45.85	97.79	0.47	1.03	484	1030	482	13	6
1620	—165.82	—2.908	—45.72	—97.12	—0.47	—1.02	—481	—1023	+481	—13	+6
22	163.50	2.867	45.58	96.45	0.47	1.01	477	1016	480	13	6
24	161.20	2.827	45.44	95.79	0.47	1.01	474	1008	478	13	6
26	158.91	2.787	45.30	95.12	0.47	1.00	471	1001	477	13	6
28	156.63	2.747	45.16	94.45	0.47	0.99	468	994	476	13	6
1630	—154.37	—2.707	—45.01	—93.78	—0.47	—0.98	—465	—987	+474	—13	+6
32	152.13	2.668	44.86	93.11	0.47	0.98	461	980	472	13	6
34	149.90	2.629	44.71	92.44	0.46	0.97	458	973	471	13	6
36	147.69	2.590	44.55	91.77	0.46	0.96	455	966	469	12	6
38	145.49	2.551	44.39	91.09	0.46	0.96	452	959	468	12	6
1640	—143.31	—2.513	—44.23	—90.42	—0.46	—0.95	—448	—952	+466	—12	+6
42	141.14	2.475	44.07	89.74	0.46	0.94	445	945	464	12	6
44	138.99	2.437	43.90	89.07	0.45	0.94	442	937	463	12	6
46	136.86	2.400	43.73	88.39	0.45	0.93	439	930	461	12	6
48	134.75	2.363	43.56	87.72	0.45	0.92	435	923	459	12	6
1650	—132.65	—2.326	—43.39	—87.04	—0.45	—0.91	—432	—916	+457	—12	+6
52	130.56	2.289	43.21	86.36	0.45	0.91	429	909	455	12	6
54	128.49	2.253	43.03	85.68	0.45	0.90	426	902	453	12	6
56	126.44	2.217	42.85	85.00	0.44	0.89	422	895	451	11	6
58	124.40	2.181	42.67	84.32	0.44	0.89	419	888	449	11	6
1660	—122.38	—2.146	—42.49	—83.64	—0.44	—0.88	—416	—881	+447	—11	+6
62	120.38	2.111	42.30	82.96	0.44	0.87	412	873	445	11	6
64	118.39	2.076	42.11	82.27	0.44	0.86	409	866	443	11	6
66	116.42	2.041	41.92	81.59	0.43	0.86	406	859	441	11	5
68	114.46	2.007	41.73	80.90	0.43	0.85	402	852	439	11	5
1670	—112.51	—1.973	—41.53	—80.22	—0.43	—0.84	—399	—845	+437	—11	+5
72	110.58	1.939	41.33	79.53	0.43	0.83	396	837	434	11	5
74	108.67	1.906	41.13	78.85	0.43	0.83	392	830	432	11	5
76	106.78	1.873	40.93	78.16	0.42	0.82	389	823	430	10	5
78	104.90	1.840	40.72	77.48	0.42	0.81	386	816	428	10	5
1680	—103.04	—1.807	—40.51	—76.79	—0.42	—0.80	—382	—808	+426	—10	+5
82	101.20	1.775	40.30	76.11	0.42	0.80	379	801	423	10	5
84	99.37	1.743	40.09	75.42	0.42	0.79	376	794	421	10	5
86	97.56	1.711	39.87	74.73	0.41	0.78	372	787	419	10	5
88	95.76	1.679	39.65	74.04	0.41	0.78	369	780	417	10	5
1690	—93.98	—1.648	—39.43	—73.35	—0.41	—0.77	—366	—772	+415	—10	+5
92	92.21	1.617	39.21	72.66	0.41	0.76	362	765	412	10	5
94	90.46	1.586	38.98	71.97	0.41	0.76	359	758	410	10	5
96	88.73	1.556	38.75	71.28	0.40	0.75	356	751	408	9	5
98	87.02	1.526	38.52	70.58	0.40	0.74	353	743	406	9	5
1700	—85.32	—1.496	—38.28	—69.89	—0.40	—0.73	—349	—736	+403	—9	+5

• The quantities (p. c. o), (p. s. 1) etc., are expressed in units of the seventh place of decimals.

TABLE IV.—*Secular terms and terms of long period, 1600–2000.*

Year.	δl	δg	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(p. c. o)	(p. s. 1)	(p. c. 1)	(p. s. 2)	(p. c. 2)
	"	'	"	"	"	"					
1700	−85.32	−1.496	−38.28	−69.89	−0.40	−0.73	−349	−736	+403	−9	+5
02	83.64	1.466	38.04	69.20	0.40	0.73	346	729	400	9	5
04	81.97	1.437	37.80	68.50	0.39	0.72	342	721	398	9	5
06	80.32	1.408	37.56	67.81	0.39	0.71	339	714	395	9	5
08	78.69	1.379	37.31	67.11	0.39	0.71	336	707	393	9	5
1710	−77.07	−1.351	−37.06	−66.42	−0.38	−0.70	−332	−699	+390	−9	+5
12	75.47	1.323	36.81	65.72	0.38	0.69	328	692	388	9	5
14	73.89	1.295	36.55	65.03	0.38	0.69	325	685	385	9	5
16	72.32	1.267	36.29	64.33	0.38	0.68	322	678	382	8	5
18	70.77	1.240	36.03	63.64	0.37	0.67	318	670	379	8	5
1720	−69.23	−1.213	−35.77	−62.94	−0.37	−0.66	−315	−663	+376	−8	+5
22	67.71	1.186	35.50	62.24	0.37	0.66	312	656	374	8	5
24	66.21	1.160	35.23	61.55	0.36	0.65	308	648	371	8	5
26	64.72	1.134	34.96	60.85	0.36	0.64	305	641	368	8	5
28	63.25	1.108	34.69	60.15	0.36	0.63	302	634	365	8	5
1730	−61.80	−1.083	−34.42	−59.45	−0.36	−0.62	−298	−626	+362	−8	+5
32	60.36	1.058	34.14	58.76	0.35	0.62	295	619	359	8	5
34	58.94	1.033	33.86	58.06	0.35	0.61	291	611	356	8	5
36	57.54	1.008	33.58	57.36	0.35	0.60	288	604	353	7	4
38	56.15	0.984	33.29	56.66	0.34	0.60	285	596	350	7	4
1740	54.78	0.960	33.00	55.96	0.34	−0.59	281	589	+347	−7	+4
42	53.43	0.936	32.71	55.26	0.34	0.58	278	582	344	7	4
44	52.09	0.913	32.41	54.56	0.34	0.58	274	574	341	7	4
46	50.77	0.890	32.11	53.86	0.33	0.57	271	567	338	7	4
48	49.46	0.867	31.81	53.16	0.33	0.56	268	560	335	7	4
1750	−48.17	−0.844	−31.51	−52.46	−0.33	−0.55	−264	−552	+332	−7	+4
52	46.90	0.822	31.20	51.76	0.32	0.54	261	545	328	7	4
54	45.64	0.800	30.89	51.06	0.32	0.54	257	538	325	7	4
56	44.40	0.778	30.58	50.36	0.32	0.53	254	531	322	7	4
58	43.18	0.757	30.27	49.66	0.32	0.52	250	523	319	7	4
1760	−41.98	−0.736	−29.95	−48.96	−0.31	−0.51	−247	−516	+315	−7	+4
62	40.79	0.715	29.63	48.26	0.31	0.51	243	508	312	7	4
64	39.62	0.695	29.31	47.55	0.31	0.50	240	501	308	7	4
66	38.47	0.675	28.98	46.85	0.30	0.49	236	494	305	6	4
68	37.33	0.655	28.65	46.15	0.30	0.49	233	486	301	6	4
1770	−36.21	−0.635	−28.32	−45.45	−0.30	−0.48	−229	−479	+298	−6	+4
72	35.11	0.616	27.99	44.74	0.29	0.47	226	472	294	6	4
74	34.03	0.597	27.65	44.04	0.29	0.47	222	464	291	6	4
76	32.96	0.578	27.31	43.34	0.29	0.46	219	457	287	6	3
78	31.90	0.559	26.97	42.64	0.28	0.45	215	449	284	6	3
1780	−30.86	−0.541	−26.62	−41.94	−0.28	−0.44	−212	−442	+280	−6	+3
82	29.84	0.523	26.27	41.23	0.28	0.43	208	435	277	6	3
84	28.84	0.505	25.92	40.53	0.27	0.43	205	427	273	6	3
86	27.85	0.488	25.56	39.83	0.27	0.42	202	420	270	5	3
88	26.88	0.471	25.20	39.13	0.26	0.41	198	412	266	5	3
1790	−25.93	−0.454	−24.84	−38.43	−0.26	−0.40	−195	−405	+262	5	+3
92	24.99	0.438	24.48	37.72	0.26	0.40	191	398	258	5	3
94	24.07	0.422	24.11	37.02	0.25	0.39	188	390	254	5	3
96	23.17	0.406	23.74	36.32	0.25	0.38	184	383	250	5	3
98	22.29	0.390	23.37	35.62	0.24	0.38	181	375	246	5	3
1800	−21.42	−0.375	−22.99	−34.92	−0.24	−0.37	−177	−368	+242	−5	+3

The quantities ($p. c. o$), ($p. s. 1$), etc., are expressed in units of the seventh place of decimals.

TABLE IV.—*Secular terms and terms of long period, 1600 to 2000.*

Year.	δl	δg	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(ρ . c. 0)	(ρ . s. 1)	(ρ . c. 1)	(ρ . s. 2)	(ρ . c. 2)
	"	'	"	"	"	"					
1800	-21.42	-0.375	-22.99	-34.92	-0.24	-0.37	-177	-368	+242	-5	+3
02	20.57	0.360	22.61	34.22	0.24	0.36	174	361	238	5	3
04	19.74	0.345	22.23	33.51	0.23	0.36	170	353	234	5	3
06	18.92	0.331	21.84	32.81	0.23	0.35	167	346	230	4	3
08	18.12	0.317	21.45	32.11	0.22	0.34	163	338	226	4	3
1810	-17.33	-0.304	-21.06	-31.41	-0.22	-0.33	-160	-331	+222	-4	+3
12	16.56	0.291	20.67	30.71	0.21	0.32	156	324	218	4	3
14	15.81	0.278	20.27	30.01	0.21	0.32	153	316	214	4	3
16	15.08	0.265	19.87	29.31	0.20	0.31	149	309	209	4	2
18	14.36	0.252	19.47	28.61	0.20	0.30	146	301	205	4	2
1820	-13.66	-0.240	-19.06	-27.91	-0.19	-0.29	-142	-294	+201	-4	+2
22	12.97	0.228	18.65	27.21	0.19	0.29	139	287	197	4	2
24	12.30	0.216	18.24	26.51	0.19	0.28	135	279	192	4	2
26	11.65	0.205	17.83	25.81	0.18	0.27	131	272	188	3	2
28	11.02	0.194	17.41	25.11	0.18	0.27	128	264	183	3	2
1830	-10.41	-0.183	-16.99	-24.41	-0.17	-0.26	-125	-257	+179	-3	+2
32	9.81	0.172	16.57	23.71	0.17	0.25	121	250	174	3	2
34	9.23	0.162	16.14	23.01	0.16	0.25	118	242	170	3	2
36	8.67	0.152	15.71	22.31	0.16	0.24	114	235	165	3	2
38	8.12	0.142	15.28	21.62	0.16	0.23	111	227	161	3	2
1840	-7.59	-0.133	-14.84	-20.92	-0.15	-0.22	-107	-220	+156	-3	+2
42	7.08	0.124	14.40	20.22	0.15	0.21	104	213	152	3	2
44	6.58	0.115	13.96	19.53	0.14	0.21	100	206	147	3	2
46	6.10	0.107	13.52	18.83	0.14	0.20	97	198	143	2	2
48	5.64	0.099	13.07	18.13	0.13	0.19	93	191	138	2	2
1850	-5.19	-0.091	-12.62	-17.44	-0.13	-0.18	-90	-184	+133	-2	+2
52	4.76	0.084	12.17	16.74	0.12	0.17	86	176	129	2	2
54	4.35	0.077	11.71	16.05	0.12	0.17	83	169	124	2	2
56	3.96	0.070	11.25	15.36	0.11	0.16	79	162	119	2	1
58	3.58	0.063	10.79	14.66	0.11	0.15	76	155	114	2	1
1860	-3.22	-0.057	-10.32	-13.97	-0.10	-0.14	-72	-147	+109	-2	+1
62	2.88	0.051	9.85	13.28	0.10	0.14	69	140	104	2	1
64	2.55	0.045	9.38	12.59	0.09	0.13	65	133	99	2	1
66	2.24	0.040	8.90	11.90	0.09	0.12	62	125	94	1	1
68	1.95	0.035	8.42	11.21	0.08	0.12	58	118	89	1	1
1870	-1.68	-0.030	-7.94	-10.52	-0.08	-0.11	-55	-111	+84	-1	+1
72	1.42	0.025	7.45	9.83	0.07	0.10	51	104	79	1	1
74	1.18	0.021	6.96	9.14	0.07	0.10	48	97	74	1	1
76	0.96	0.017	6.47	8.46	0.06	0.09	44	89	68	1	1
78	0.75	0.013	5.98	7.77	0.06	0.08	41	82	63	1	1
1880	-0.56	-0.010	-5.48	-7.08	-0.05	-0.07	-37	-75	+58	-1	+1
82	0.38	0.007	4.98	6.40	0.04	0.07	34	68	53	1	1
84	0.22	0.004	4.48	5.71	0.04	0.06	30	61	47	-1	+1
86	-0.08	-0.002	3.97	5.02	0.03	0.05	27	54	42	0	0
88	+0.04	0.000	3.46	4.34	0.03	0.05	23	46	37	0	0
1890	+0.14	+0.002	-2.95	-3.65	-0.02	-0.04	-20	-39	+31	0	0
92	0.23	0.004	2.43	2.97	0.02	0.03	16	32	26	0	0
94	0.30	0.005	1.91	2.28	0.01	0.03	13	25	20	0	0
96	0.35	0.006	1.39	1.60	-0.01	0.02	9	18	15	0	0
98	0.39	0.007	0.87	0.92	0.00	-0.01	6	10	9	0	0
1900	+0.41	+0.007	-0.34	-0.24	0.00	0.00	-2	3	+4	0	0

The quantities (ρ . c. 1), (ρ . s. 1), etc., are expressed in units of the seventh place of decimals.

TABLE IV.—*Secular terms and terms of long period, 1600–2000.*

Year.	δl	δg	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(p. c. o)	(. s. 1)	(p. c. 1)	(p. s. 2)	(p. c. 2)
	"	"	"	"	"	"					
1900	+ 0.41	+ 0.007	- 0.34	- 0.24	0.00	0.00	- 2	- 3	+ 4	0	0
02	0.41	0.007	+ 0.19	+ 0.44	0.00	+ 0.01	+ 2	+ 4	- 2	0	0
04	0.40	0.007	0.72	1.12	+ 0.01	0.01	5	12	8	0	0
06	0.37	0.006	1.26	1.80	0.02	0.02	9	19	13	0	0
08	0.32	0.005	1.80	2.47	0.02	0.03	12	27	19	0	0
1910	+ 0.25	+ 0.004	+ 2.35	+ 3.15	+ 0.03	+ 0.04	+ 16	+ 34	- 25	0	0
12	0.17	0.003	2.90	3.82	0.03	0.04	19	41	30	0	0
14	+ 0.07	+ 0.001	3.45	4.50	0.04	0.05	23	48	36	0	0
16	- 0.05	0.001	4.00	5.17	0.04	0.06	26	55	42	+ 1	- 1
18	0.18	0.003	4.56	5.84	0.05	0.06	30	62	48	1	1
1920	- 0.33	- 0.006	+ 5.12	+ 6.51	+ 0.06	+ 0.07	+ 33	+ 68	- 54	+ 1	- 1
22	0.50	0.009	5.68	7.18	0.06	0.08	37	75	60	1	1
24	0.69	0.012	6.25	7.85	0.07	0.08	40	82	66	1	1
26	0.89	0.016	6.82	8.52	0.07	0.09	44	89	72	1	1
28	1.11	0.020	7.39	9.18	0.08	0.10	47	96	78	1	1
1930	- 1.34	- 0.024	+ 7.96	+ 9.85	+ 0.09	+ 0.11	+ 51	+ 103	- 84	+ 1	- 1
32	1.59	0.028	8.54	10.51	0.09	0.11	54	110	90	1	1
34	1.86	0.033	9.12	11.18	0.10	0.12	58	117	96	1	1
36	2.15	0.038	9.71	11.84	0.11	0.13	61	124	102	2	2
38	2.45	0.043	10.30	12.50	0.11	0.13	65	131	108	2	2
1940	- 2.77	- 0.049	+ 10.89	+ 13.16	+ 0.12	+ 0.14	+ 68	+ 138	- 114	+ 2	- 2
42	3.11	0.055	11.48	13.82	0.13	0.15	72	145	121	2	2
44	3.46	0.061	12.08	14.48	0.14	0.15	75	152	127	2	2
46	3.83	0.068	12.68	15.14	0.15	0.16	79	159	133	2	2
48	4.22	0.075	13.28	15.79	0.15	0.17	82	166	140	2	2
1950	- 4.63	- 0.082	+ 13.89	+ 16.45	+ 0.16	+ 0.18	+ 86	+ 173	- 146	+ 2	- 2
52	5.05	0.089	14.50	17.10	0.17	0.18	89	180	153	2	2
54	5.49	0.097	15.11	17.76	0.17	0.19	93	187	159	2	2
56	5.95	0.105	15.73	18.41	0.18	0.20	97	193	166	3	2
58	6.42	0.113	16.35	19.06	0.19	0.20	100	200	172	3	2
1960	- 6.91	- 0.122	+ 16.98	+ 19.71	+ 0.19	+ 0.21	+ 104	+ 207	- 179	+ 3	- 2
62	7.42	0.131	17.61	20.36	0.20	0.22	107	214	186	3	2
64	7.95	0.140	18.24	21.00	0.20	0.22	111	221	192	3	2
66	8.49	0.149	18.87	21.64	0.21	0.23	114	228	199	3	3
68	9.05	0.159	19.51	22.29	0.22	0.24	118	234	205	3	3
1970	- 9.62	- 0.169	+ 20.15	+ 22.93	+ 0.22	+ 0.25	+ 121	+ 241	- 212	+ 3	- 3
72	10.21	0.179	20.79	23.57	0.23	0.25	125	248	219	3	3
74	10.82	0.190	21.44	24.21	0.24	0.26	128	254	225	3	3
76	11.45	0.201	22.09	24.85	0.24	0.27	132	261	232	4	3
78	12.09	0.212	22.74	25.48	0.25	0.27	135	268	239	4	3
1980	- 12.75	- 0.224	+ 23.39	+ 26.12	+ 0.26	+ 0.28	+ 139	+ 275	- 246	+ 4	- 3
82	13.43	0.236	24.05	26.75	0.26	0.29	142	281	253	4	3
84	14.12	0.248	24.71	27.38	0.27	0.29	146	288	260	4	3
86	14.83	0.260	25.38	28.01	0.28	0.30	149	295	267	4	4
88	15.56	0.273	26.05	28.64	0.28	0.31	153	302	274	4	4
1990	- 16.30	- 0.286	+ 26.72	+ 29.27	+ 0.29	+ 0.32	+ 156	+ 308	- 281	+ 4	- 4
92	17.06	0.299	27.40	29.89	0.30	0.32	160	315	288	4	4
94	17.84	0.313	28.08	30.52	0.30	0.33	163	321	295	4	4
96	18.63	0.327	28.76	31.14	0.31	0.34	167	328	302	4	4
98	19.44	0.341	29.44	31.77	0.32	0.34	170	335	309	4	4
2000	- 20.27	- 0.356	+ 30.13	+ 32.39	+ 0.33	+ 0.35	+ 174	+ 341	- 317	+ 4	- 4

The quantities ($p. c. o$), ($p. s. 1$), etc., are expressed in units of the seventh place of decimals.

TABLE V, PART I.—Arg. I. *Action of Uranus.* Constant of ($\rho. c. o$) = 200.

Arg.	($v. c. o$)	($v. s. 1$)	($v. c. 1$)	($v. s. 2$)	($v. c. 2$)	($\rho. c. o$)	Arg.	($v. c. o$)	($v. s. 1$)	($v. c. 1$)	($v. s. 2$)	($v. c. 2$)	($\rho. c. o$)
	"	"	"	"	"			"	"	"	"	"	
0	+5.76	+9.99	+0.21	+0.26	-1.52	+10	60	+3.48	+0.33	-7.69	-1.26	+0.56	+26
1	5.80	9.94	-0.01	0.21	1.52	10	61	3.37	+0.11	7.67	1.24	0.60	26
2	5.83	9.89	0.24	0.15	1.52	10	62	3.27	-0.11	7.66	1.21	0.65	27
3	5.86	9.84	0.47	0.10	1.52	10	63	3.17	0.32	7.63	1.18	0.69	27
4	5.89	9.78	0.69	+0.04	1.52	10	64	3.06	0.54	7.60	1.16	0.73	27
5	+5.92	+9.71	-0.91	-0.01	-1.52	+10	65	+2.95	-0.76	-7.57	-1.13	+0.77	+27
6	5.95	9.64	1.13	0.06	1.51	10	66	2.85	0.97	7.53	1.10	0.81	27
7	5.97	9.57	1.35	0.12	1.50	11	67	2.74	1.19	7.49	1.07	0.85	28
8	5.99	9.49	1.57	0.17	1.49	11	68	2.63	1.40	7.44	1.03	0.89	28
9	6.00	9.40	1.78	0.23	1.48	11	69	2.52	1.61	7.38	1.00	0.92	28
10	+6.01	+9.31	-1.99	-0.28	-1.47	+11	70	+2.41	1.82	-7.32	-0.96	+0.96	+28
11	6.02	9.21	2.20	0.33	1.46	12	71	2.30	2.03	7.26	0.93	0.99	28
12	6.03	9.11	2.41	0.38	1.44	12	72	2.18	2.24	7.19	0.89	1.02	29
13	6.04	9.00	2.61	0.43	1.42	12	73	2.07	2.44	7.11	0.85	1.05	29
14	6.04	8.89	2.81	0.48	1.40	12	74	1.95	2.64	7.03	0.81	1.08	29
15	+6.04	+8.78	-3.01	-0.53	-1.38	+13	75	+1.84	2.84	-6.95	0.77	+1.11	+29
16	6.03	8.66	3.21	0.58	1.36	13	76	1.72	3.04	6.86	0.73	1.14	29
17	6.03	8.54	3.41	0.62	1.33	13	77	1.60	3.23	6.76	0.68	1.16	29
18	6.02	8.41	3.60	0.67	1.30	13	78	1.48	3.42	6.66	0.64	1.19	30
19	6.00	8.27	3.79	0.72	1.28	14	79	1.36	3.61	6.56	0.59	1.21	30
20	+5.99	+8.14	-3.97	-0.76	-1.25	+14	80	+1.24	-3.80	-6.45	-0.55	+1.23	+30
21	5.97	7.99	4.15	0.80	1.22	14	81	1.12	3.98	6.33	0.50	1.25	30
22	5.95	7.85	4.33	0.84	1.18	14	82	1.00	4.16	6.21	0.46	1.26	30
23	5.93	7.70	4.50	0.88	1.15	15	83	0.88	4.34	6.09	0.41	1.28	30
24	5.90	7.54	4.67	0.92	1.12	15	84	0.76	4.52	5.96	0.36	1.29	30
25	+5.87	+7.39	-4.84	-0.96	-1.08	+15	85	+0.64	-4.69	-5.83	0.31	+1.30	+30
26	5.84	7.23	5.00	1.00	1.04	16	86	0.52	4.85	5.69	0.26	1.31	30
27	5.81	7.06	5.16	1.03	1.00	16	87	0.40	5.02	5.55	0.22	1.32	30
28	5.78	6.89	5.31	1.06	0.96	16	88	0.28	5.18	5.41	0.17	1.33	30
29	5.74	6.72	5.46	1.10	0.92	17	89	0.15	5.34	5.26	0.12	1.33	30
30	+5.70	+6.55	-5.60	-1.13	-0.88	+17	90	+0.03	-5.49	-5.11	-0.07	+1.34	+30
31	5.65	6.37	5.74	1.16	0.84	18	91	-0.09	5.64	4.95	-0.02	1.34	30
32	5.61	6.19	5.88	1.18	0.80	18	92	0.21	5.79	4.79	+0.03	1.34	30
33	5.56	6.00	6.01	1.21	0.75	18	93	0.33	5.93	4.62	0.08	1.34	31
34	5.51	5.81	6.14	1.24	0.71	18	94	0.46	6.07	4.45	0.13	1.33	31
35	+5.45	+5.62	-6.26	-1.26	-0.66	+19	95	-0.58	-6.20	-4.28	+0.18	+1.33	+31
36	5.40	5.43	6.38	1.28	0.62	19	96	0.70	6.33	4.11	0.23	1.32	31
37	5.34	5.24	6.49	1.30	0.57	20	97	0.82	6.46	3.93	0.28	1.31	31
38	5.28	5.04	6.60	1.32	0.52	20	98	0.94	6.58	3.75	0.32	1.30	31
39	5.22	4.84	6.71	1.33	0.47	20	99	1.06	6.69	3.56	0.37	1.28	31
40	+5.16	+4.64	-6.81	-1.35	-0.42	+20	100	-1.18	-6.80	-3.38	+0.42	+1.27	+31
41	5.09	4.44	6.90	1.36	0.37	21	101	1.30	6.91	3.19	0.47	1.25	31
42	5.02	4.23	6.99	1.37	0.32	21	102	1.42	7.01	2.99	0.51	1.23	30
43	4.95	4.02	7.07	1.38	0.27	22	103	1.54	7.11	2.80	0.56	1.21	30
44	4.88	3.81	7.15	1.38	0.22	22	104	1.66	7.20	2.60	0.60	1.19	30
45	+4.80	+3.60	-7.23	-1.39	-0.17	+22	105	-1.78	-7.29	-2.40	+0.64	+1.17	+30
46	4.72	3.38	7.29	1.39	0.12	22	106	1.89	7.37	2.20	0.69	1.14	30
47	4.65	3.17	7.36	1.40	0.07	23	107	2.01	7.44	1.99	0.73	1.12	30
48	4.57	2.96	7.41	1.40	-0.02	23	108	2.12	7.52	1.78	0.77	1.09	30
49	4.48	2.74	7.47	1.39	+0.03	23	109	2.24	7.58	1.57	0.81	1.06	30
50	+4.40	+2.52	-7.51	-1.39	+0.08	+24	110	-2.35	-7.64	-1.36	+0.85	+1.03	+30
51	4.32	2.30	7.55	1.38	0.13	24	111	2.46	7.70	1.15	0.88	1.00	29
52	4.23	2.09	7.59	1.38	0.18	24	112	2.57	7.75	0.94	0.92	0.97	29
53	4.14	1.87	7.62	1.37	0.23	24	113	2.68	7.80	0.72	0.96	0.93	29
54	4.05	1.65	7.65	1.36	0.28	25	114	2.79	7.84	0.50	0.99	0.90	29
55	+3.96	+1.43	-7.67	-1.34	+0.32	+25	115	-2.90	-7.87	-0.28	+1.02	+0.86	+29
56	3.87	1.21	7.68	1.33	0.37	25	116	3.00	7.90	-0.06	1.05	0.82	28
57	3.77	0.99	7.69	1.32	0.42	26	117	3.11	7.93	+0.16	1.08	0.78	28
58	3.68	0.77	7.69	1.30	0.47	26	118	3.21	7.95	0.38	1.11	0.74	28
59	3.58	0.55	7.69	1.28	0.51	26	119	3.31	7.96	0.60	1.14	0.70	28
60	+3.48	+0.33	-7.69	-1.26	+0.56	+26	120	-3.41	-7.97	+0.82	+1.17	+0.66	+28

($\rho. c. o$) is expressed in units of the seventh place of decimals.

TABLE V, PART I.—Arg. I. *Action of Uranus.* Constant of ($\rho. c. o$) = 200.

Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	($\rho. c. o$)	Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	($\rho. c. o$)
	"	"	"	"	"			"	"	"	"	"	
120	-3.41	-7.97	+0.82	+1.17	+0.66	+28	180	-5.76	+0.26	+10.69	-0.17	-1.46	+9
121	3.51	7.97	1.05	1.19	0.62	27	181	5.72	0.50	10.73	0.23	1.46	9
122	3.61	7.97	1.27	1.21	0.57	27	182	5.68	0.73	10.77	0.28	1.46	9
123	3.71	7.96	1.49	1.23	0.53	27	183	5.64	0.97	10.80	0.34	1.45	9
124	3.80	7.94	1.72	1.25	0.48	26	184	5.59	1.21	10.83	0.39	1.44	9
125	-3.90	7.92	+1.94	+1.27	+0.44	+26	185	-5.54	+1.45	+10.85	-0.44	-1.43	+9
126	3.99	7.90	2.16	1.28	0.39	26	186	5.49	1.69	10.86	0.49	1.43	9
127	4.08	7.87	2.39	1.30	0.34	25	187	5.43	1.93	10.87	0.55	1.42	9
128	4.17	7.83	2.61	1.31	0.29	25	188	5.37	2.17	10.87	0.60	1.41	9
129	4.26	7.79	2.83	1.32	0.25	25	189	5.31	2.41	10.87	0.65	1.39	10
130	-4.35	-7.75	+3.05	+1.33	+0.20	+24	190	-5.25	+2.65	+10.87	-0.70	-1.36	+10
131	4.43	7.70	3.27	1.33	0.15	24	191	5.18	2.89	10.85	0.75	1.33	10
132	4.51	7.64	3.49	1.34	0.10	24	192	5.11	3.13	10.84	0.80	1.31	10
133	4.59	7.58	3.71	1.34	+0.05	23	193	5.04	3.37	10.81	0.85	1.29	10
134	4.67	7.51	3.93	1.34	0.00	23	194	4.97	3.61	10.78	0.90	1.26	11
135	-4.75	-7.44	+4.15	+1.34	-0.05	+22	195	-4.89	+3.85	+10.75	-0.95	-1.23	+11
136	4.82	7.36	4.36	1.34	0.10	22	196	4.81	4.09	10.71	1.00	1.20	12
137	4.89	7.27	4.57	1.34	0.15	22	197	4.73	4.32	10.66	1.04	1.17	12
138	4.96	7.18	4.78	1.33	0.20	21	198	4.64	4.56	10.61	1.09	1.14	12
139	5.03	7.09	4.99	1.33	0.25	21	199	4.56	4.79	10.55	1.13	1.11	13
140	-5.10	-6.99	+5.20	+1.32	-0.29	+20	200	-4.47	+5.03	+10.49	-1.17	-1.07	+13
141	5.16	6.89	5.41	1.31	0.34	20	201	4.37	5.26	10.42	1.21	1.03	14
142	5.22	6.78	5.61	1.30	0.39	19	202	4.28	5.49	10.35	1.25	0.99	14
143	5.28	6.67	5.81	1.28	0.44	19	203	4.18	5.72	10.27	1.29	0.95	14
144	5.34	6.55	6.01	1.27	0.49	19	204	4.08	5.95	10.19	1.33	0.91	15
145	-5.40	-6.43	+6.21	+1.25	-0.54	+18	205	-3.98	+6.17	+10.10	-1.37	-0.87	+16
146	5.45	6.30	6.40	1.23	0.58	18	206	3.87	6.40	10.01	1.40	0.82	16
147	5.50	6.17	6.59	1.21	0.63	17	207	3.77	6.62	9.91	1.44	0.78	17
148	5.55	6.03	6.78	1.19	0.67	17	208	3.66	6.84	9.80	1.47	0.73	18
149	5.60	5.88	6.96	1.16	0.72	16	209	3.54	7.05	9.69	1.50	0.68	18
150	-5.64	-5.74	+7.15	+1.14	-0.76	+16	210	-3.43	+7.27	+9.58	-1.53	-0.63	+19
151	5.68	5.59	7.33	1.11	0.80	16	211	3.31	7.48	9.46	1.55	0.58	20
152	5.72	5.44	7.50	1.08	0.84	15	212	3.19	7.69	9.33	1.58	0.53	20
153	5.76	5.28	7.67	1.05	0.88	15	213	3.06	7.90	9.20	1.60	0.48	21
154	5.79	5.11	7.84	1.02	0.92	14	214	2.94	8.10	9.07	1.62	0.42	22
155	-5.83	-4.95	+8.01	+0.99	-0.96	+14	215	-2.81	+8.30	+8.93	-1.64	-0.37	+23
156	5.86	4.78	8.17	0.95	1.00	14	216	2.68	8.50	8.79	1.66	0.32	24
157	5.88	4.60	8.32	0.92	1.04	13	217	2.55	8.69	8.64	1.68	0.26	25
158	5.91	4.42	8.48	0.88	1.07	13	218	2.42	8.88	8.49	1.69	0.20	26
159	5.93	4.24	8.63	0.84	1.11	13	219	2.28	9.07	8.33	1.71	0.15	27
160	-5.95	-4.05	+8.77	+0.80	-1.14	+12	220	-2.14	+9.25	+8.17	-1.72	-0.09	+28
161	5.97	3.86	8.91	0.76	1.17	12	221	2.00	9.43	8.00	1.73	-0.03	29
162	5.98	3.67	9.05	0.72	1.20	12	222	1.86	9.61	7.83	1.73	+0.02	30
163	5.99	3.47	9.18	0.68	1.23	11	223	1.72	9.78	7.66	1.74	0.08	31
164	6.00	3.27	9.31	0.63	1.26	11	224	1.57	9.95	7.48	1.74	0.14	33
165	-6.00	-3.07	+9.43	+0.59	-1.28	+11	225	-1.42	+10.12	+7.30	-1.74	+0.20	+34
166	6.00	2.86	9.55	0.54	1.31	10	226	1.27	10.28	7.11	1.74	0.26	35
167	6.00	2.66	9.66	0.49	1.33	10	227	1.12	10.43	6.92	1.74	0.32	37
168	6.00	2.45	9.77	0.45	1.35	10	228	0.97	10.58	6.73	1.74	0.38	38
169	6.00	2.23	9.88	0.40	1.37	10	229	0.82	10.73	6.53	1.73	0.44	40
170	-5.99	-2.02	+9.98	+0.35	-1.39	+10	230	-0.66	+10.87	+6.33	-1.72	+0.50	+41
171	5.98	1.80	10.07	0.30	1.40	10	231	0.50	11.01	6.12	1.71	0.55	43
172	5.97	1.58	10.16	0.25	1.42	10	232	0.34	11.15	5.91	1.70	0.61	44
173	5.95	1.35	10.25	0.20	1.43	9	233	0.18	11.28	5.70	1.68	0.67	46
174	5.93	1.13	10.33	0.15	1.44	9	234	-0.02	11.41	5.49	1.66	0.73	48
175	-5.91	-0.90	+10.40	+0.09	-1.45	+9	235	+0.15	+11.53	+5.27	-1.65	+0.78	+50
176	5.89	0.67	10.47	+0.04	1.46	9	236	0.31	11.64	5.05	1.63	0.84	51
177	5.86	0.44	10.53	0.01	1.46	9	237	0.48	11.75	4.83	1.60	0.90	53
178	5.83	0.21	10.59	0.07	1.46	9	238	0.65	11.86	4.60	1.58	0.95	55
179	5.80	+0.03	10.64	0.12	1.46	9	239	0.82	11.96	4.37	1.56	1.00	57
180	-5.76	+0.26	+10.69	-0.17	-1.46	+9	240	+0.99	+12.05	+4.14	-1.53	+1.06	+59

($\rho. c. o$) is expressed in units of the seventh place of decimals.

TABLE V, PART I.—Arg. I. *Action of Uranus.* Constant of ($\rho. c. o$) = 200.

Arg.	($v. c. o$)	($v. s. 1$)	($v. c. 1$)	($v. s. 2$)	($v. c. 2$)	($\rho. c. o$)	Arg.	($v. c. o$)	($v. s. 1$)	($v. c. 1$)	($v. s. 2$)	($v. c. 2$)	($\rho. c. o$)
	"	"	"	"	"			"	"	"	"	"	
240	+ 0.99	+12.05	+4.14	-1.53	+1.06	+ 59	300	+10.77	+8.37	- 9.75	+1.70	+1.46	+280
241	1.16	12.14	3.91	1.50	1.11	61	301	10.88	8.18	9.91	1.75	1.41	285
242	1.33	12.23	3.67	1.47	1.16	63	302	10.99	7.98	10.07	1.79	1.36	290
243	1.50	12.31	3.44	1.43	1.21	66	303	11.09	7.78	10.23	1.84	1.31	296
244	1.68	12.39	3.20	1.40	1.26	68	304	11.18	7.58	10.38	1.88	1.26	301
245	+ 1.85	+12.46	+ 2.95	-1.36	+1.31	+ 70	305	+11.28	+ 7.38	-10.53	+1.92	+1.21	+306
246	2.03	12.52	2.71	1.32	1.36	72	306	11.37	7.17	10.67	1.95	1.16	312
247	2.21	12.58	2.47	1.29	1.40	75	307	11.46	6.96	10.81	1.99	1.10	317
248	2.38	12.63	2.22	1.25	1.45	77	308	11.54	6.75	10.95	2.02	1.05	322
249	2.56	12.68	1.97	1.20	1.49	80	309	11.62	6.54	11.08	2.05	0.99	328
250	+ 2.74	+12.72	+ 1.72	-1.16	+1.54	+ 82	310	+11.70	+ 6.32	-11.21	+2.08	+0.94	+333
251	2.92	12.76	1.47	1.12	1.58	85	311	11.77	6.11	11.33	2.11	0.88	338
252	3.10	12.79	1.22	1.07	1.62	88	312	11.83	5.89	11.45	2.14	0.82	344
253	3.28	12.82	0.97	1.02	1.66	91	313	11.89	5.67	11.56	2.17	0.76	349
254	3.45	12.84	0.71	0.97	1.69	93	314	11.95	5.45	11.67	2.19	0.70	355
255	+ 3.63	+12.86	+0.46	-0.92	+1.73	+ 96	315	+12.00	+5.22	-11.77	+2.21	+0.64	+361
256	3.81	12.87	0.20	0.87	1.76	99	316	12.05	5.00	11.87	2.23	0.58	366
257	3.99	12.87	-0.05	0.82	1.80	102	317	12.09	4.78	11.97	2.25	0.52	372
258	4.17	12.87	0.30	0.76	1.83	105	318	12.13	4.55	12.06	2.27	0.46	378
259	4.35	12.87	0.56	0.71	1.86	108	319	12.17	4.33	12.15	2.28	0.40	383
260	+ 4.53	+12.86	-0.82	-0.65	+1.88	+112	320	+12.20	+ 4.10	-12.23	+2.30	+0.33	+389
261	4.71	12.84	1.07	0.60	1.91	115	321	12.22	3.87	12.31	2.31	0.27	395
262	4.89	12.82	1.33	0.54	1.94	118	322	12.24	3.64	12.38	2.31	0.21	401
263	5.07	12.79	1.58	0.48	1.96	121	323	12.26	3.42	12.45	2.32	0.14	406
264	5.25	12.75	1.84	0.42	1.98	125	324	12.27	3.19	12.51	2.32	0.08	412
265	+ 5.42	+12.71	-2.09	-0.36	+2.00	+128	325	+12.27	+2.96	-12.57	+2.33	+0.02	+418
266	5.60	12.67	2.34	0.30	2.01	132	326	12.27	2.73	12.63	2.33	-0.04	424
267	5.78	12.62	2.59	0.24	2.03	135	327	12.26	2.50	12.68	2.33	0.11	430
268	5.96	12.57	2.84	0.18	2.04	139	328	12.25	2.27	12.72	2.32	0.17	436
269	6.13	12.51	3.09	0.12	2.05	143	329	12.23	2.04	12.76	2.32	0.23	442
270	+ 6.31	+12.44	-3.34	-0.06	+2.06	+146	330	+12.21	+ 1.81	-12.80	+2.31	-0.30	+448
271	6.48	12.37	3.59	+0.01	2.06	150	331	12.18	1.59	12.83	2.31	0.36	454
272	6.65	12.30	3.84	0.07	2.07	154	332	12.14	1.36	12.86	2.30	0.42	460
273	6.82	12.22	4.08	0.14	2.07	158	333	12.10	1.13	12.88	2.28	0.48	466
274	6.99	12.13	4.32	0.20	2.07	162	334	12.06	0.91	12.90	2.27	0.54	472
275	+ 7.16	+12.04	-4.56	+0.26	+2.07	+166	335	+12.01	+0.68	-12.92	+2.25	-0.60	+477
276	7.33	11.94	4.80	0.33	2.07	170	336	11.95	0.46	12.93	2.24	0.66	483
277	7.50	11.84	5.04	0.39	2.07	174	337	11.89	0.24	12.93	2.22	0.72	489
278	7.66	11.74	5.28	0.46	2.06	178	338	11.82	+0.02	12.93	2.20	0.78	495
279	7.83	11.63	5.51	0.52	2.05	182	339	11.74	-0.20	12.93	2.18	0.83	501
280	+ 7.99	+11.52	-5.74	+0.58	+2.04	+186	340	+11.66	-0.42	-12.92	+2.15	0.89	+507
281	8.15	11.40	5.97	0.64	2.03	190	341	11.58	0.64	12.91	2.13	0.94	513
282	8.31	11.28	6.20	0.71	2.02	195	342	11.48	0.85	12.89	2.10	1.00	519
283	8.47	11.15	6.42	0.77	2.00	199	343	11.38	1.07	12.87	2.08	1.05	524
284	8.62	11.02	6.64	0.83	1.98	204	344	11.28	1.28	12.85	2.05	1.11	530
285	+ 8.78	+10.88	-6.86	+0.89	+1.96	+208	345	+11.16	- 1.49	-12.83	+2.02	-1.16	+536
286	8.93	10.74	7.07	0.95	1.94	212	346	11.05	1.69	12.80	1.99	1.21	542
287	9.08	10.59	7.29	1.01	1.92	217	347	10.92	1.90	12.76	1.96	1.26	547
288	9.22	10.44	7.50	1.07	1.90	222	348	10.79	2.10	12.72	1.92	1.31	553
289	9.37	10.29	7.70	1.13	1.87	226	349	10.66	2.30	12.68	1.89	1.35	558
290	+ 9.51	+10.13	-7.90	+1.19	+1.84	+231	350	+10.51	-2.50	-12.64	+1.85	-1.40	+564
291	9.65	9.97	8.10	1.24	1.81	236	351	10.36	2.70	12.59	1.82	1.44	569
292	9.78	9.81	8.30	1.30	1.78	240	352	10.21	2.89	12.54	1.78	1.49	574
293	9.92	9.64	8.49	1.36	1.74	245	353	10.05	3.08	12.49	1.74	1.53	580
294	10.05	9.47	8.68	1.41	1.71	250	354	9.88	3.27	12.43	1.70	1.57	585
295	+10.18	+ 9.30	-8.87	+1.46	+1.67	+255	355	+ 9.70	-3.46	-12.37	+1.66	-1.61	+590
296	10.30	9.12	9.05	1.51	1.63	260	356	9.52	3.65	12.31	1.62	1.65	595
297	10.42	8.94	9.23	1.56	1.59	265	357	9.33	3.83	12.24	1.58	1.69	600
298	10.54	8.75	9.41	1.61	1.55	270	358	9.14	4.01	12.17	1.54	1.72	605
299	10.66	8.56	9.58	1.66	1.50	275	359	8.94	4.19	12.10	1.49	1.76	610
300	+10.77	+ 8.37	-9.75	+1.70	+1.46	+280	360	+ 8.73	-4.37	-12.03	+1.45	-1.79	+615

($\rho. c. o$) is expressed in units of the seventh place of decimals.

TABLE V, PART I.—Arg. I. *Action of Uranus.* Constant of ($\rho. c. o$) = 200.

Arg.	($v. c. o$)	($v. s. 1$)	($v. c. 1$)	($v. s. 2$)	($v. c. 2$)	($\rho. c. o$)	Arg.	($v. c. o$)	($v. s. 1$)	($v. c. 1$)	($v. s. 2$)	($v. c. 2$)	($\rho. c. o$)
	"	"	"	"	"			"	"	"	"	"	
360	+8.73	-4.37	-12.03	+1.45	-1.79	+615	420	-8.40	-11.85	-5.15	-1.49	-1.78	+622
361	8.51	4.54	11.96	1.40	1.83	619	421	8.62	11.94	4.99	1.54	1.74	617
362	8.29	4.71	11.88	1.36	1.86	624	422	8.83	12.02	4.82	1.58	1.71	613
363	8.07	4.88	11.80	1.31	1.89	628	423	9.04	12.09	4.65	1.62	1.67	608
364	7.84	5.05	11.72	1.27	1.92	633	424	9.24	12.17	4.48	1.66	1.63	603
365	+7.60	-5.21	-11.64	+1.22	-1.94	+637	425	-9.43	-12.24	-4.31	-1.70	1.59	+598
366	7.36	5.37	11.55	1.17	1.97	641	426	9.62	12.31	4.13	1.74	1.55	593
367	7.11	5.53	11.47	1.13	2.00	645	427	9.80	12.38	3.95	1.78	1.51	588
368	6.86	5.69	11.38	1.08	2.02	648	428	9.97	12.44	3.77	1.82	1.47	583
369	6.60	5.85	11.29	1.03	2.04	652	429	10.14	12.50	3.58	1.86	1.42	578
370	+6.34	-6.00	-11.20	+0.98	-2.06	+656	430	-10.30	-12.56	-3.40	-1.90	-1.38	+572
371	6.07	6.15	11.10	0.93	2.08	659	431	10.46	12.61	3.21	1.93	1.33	567
372	5.80	6.30	11.01	0.88	2.10	662	432	10.61	12.66	3.01	1.97	1.28	562
373	5.52	6.45	10.92	0.83	2.12	665	433	10.75	12.71	2.82	2.00	1.23	556
374	5.23	6.59	10.82	0.78	2.14	668	434	10.89	12.75	2.62	2.03	1.18	551
375	+4.95	-6.74	-10.72	+0.73	-2.16	+671	435	-11.02	-12.79	-2.42	-2.06	-1.13	+545
376	4.66	6.88	10.63	0.68	2.17	674	436	11.14	12.83	2.22	2.09	1.08	540
377	4.36	7.02	10.53	0.63	2.19	676	437	11.26	12.86	2.02	2.12	1.03	534
378	4.06	7.15	10.43	0.58	2.20	678	438	11.37	12.89	1.82	2.15	0.98	528
379	3.76	7.29	10.33	0.53	2.21	680	439	11.47	12.92	1.61	2.17	0.92	523
380	+3.45	-7.42	-10.22	+0.48	-2.22	+682	440	-11.57	-12.94	-1.40	-2.20	-0.87	+517
381	3.14	7.56	10.12	0.43	2.23	684	441	11.66	12.96	1.19	2.22	0.81	511
382	2.83	7.69	10.02	0.38	2.24	686	442	11.75	12.97	0.98	2.24	0.76	505
383	2.52	7.82	9.91	0.33	2.25	687	443	11.83	12.98	0.77	2.26	0.70	499
384	2.20	7.95	9.80	0.28	2.26	688	444	11.90	12.99	0.55	2.28	0.64	493
385	+1.88	-8.08	-9.70	+0.23	-2.26	+690	445	-11.97	-12.99	-0.34	-2.30	-0.58	+488
386	1.56	8.21	9.59	0.18	2.26	691	446	12.03	12.99	-0.12	2.31	0.52	482
387	1.24	8.33	9.48	0.13	2.26	691	447	12.09	12.98	+0.10	2.32	0.46	476
388	0.92	8.46	9.37	0.08	2.27	692	448	12.14	12.97	0.32	2.33	0.40	470
389	0.60	8.58	9.26	+0.03	2.27	692	449	12.18	12.95	0.54	2.34	0.34	464
390	+0.27	-8.70	-9.15	-0.02	-2.27	+693	450	-12.22	-12.93	+0.77	-2.35	-0.27	+458
391	-0.05	8.82	9.04	0.07	2.27	693	451	12.25	12.90	0.99	2.36	0.21	452
392	0.38	8.94	8.93	0.12	2.27	693	452	12.28	12.87	1.22	2.36	0.15	446
393	0.70	9.06	8.81	0.18	2.26	692	453	12.30	12.84	1.44	2.36	0.08	440
394	1.02	9.18	8.70	0.23	2.26	692	454	12.32	12.80	1.66	2.36	-0.02	434
395	-1.34	-9.30	-8.58	-0.28	-2.26	+691	455	-12.33	-12.76	+1.89	-2.36	+0.04	+428
396	1.66	9.41	8.46	0.33	2.25	690	456	12.33	12.71	2.12	2.36	0.11	423
397	1.98	9.53	8.34	0.38	2.24	689	457	12.33	12.66	2.34	2.36	0.17	417
398	2.30	9.64	8.22	0.43	2.24	688	458	12.32	12.60	2.57	2.35	0.23	411
399	2.62	9.76	8.10	0.48	2.23	686	459	12.31	12.54	2.80	2.34	0.30	405
400	-2.94	-9.87	-7.98	-0.53	-2.22	+685	460	-12.29	-12.47	+3.02	-2.33	+0.36	+399
401	3.25	9.98	7.86	0.58	2.21	683	461	12.27	12.40	3.25	2.32	0.42	394
402	3.56	10.09	7.73	0.63	2.20	682	462	12.24	12.32	3.47	2.30	0.49	388
403	3.86	10.20	7.60	0.68	2.18	680	463	12.21	12.24	3.70	2.29	0.55	382
404	4.16	10.31	7.47	0.73	2.17	677	464	12.18	12.15	3.92	2.27	0.61	376
405	-4.46	-10.41	-7.34	-0.78	-2.15	+675	465	-12.14	-12.06	+4.14	-2.25	+0.67	+370
406	4.76	10.52	7.21	0.83	2.13	672	466	12.09	11.97	4.36	2.23	0.73	365
407	5.05	10.62	7.08	0.88	2.11	670	467	12.04	11.87	4.58	2.20	0.79	359
408	5.34	10.73	6.94	0.93	2.09	667	468	11.99	11.77	4.80	2.18	0.85	354
409	5.62	10.83	6.80	0.98	2.07	664	469	11.93	11.66	5.02	2.15	0.91	348
410	-5.90	-10.93	-6.67	-1.03	-2.05	+660	470	-11.86	-11.55	+5.24	-2.12	+0.97	+342
411	6.17	11.03	6.53	1.08	2.03	657	471	11.79	11.43	5.45	2.09	1.02	337
412	6.44	11.13	6.38	1.12	2.01	654	472	11.72	11.31	5.67	2.06	1.08	332
413	6.70	11.23	6.24	1.17	1.98	650	473	11.64	11.19	5.88	2.02	1.14	326
414	6.96	11.32	6.09	1.22	1.96	647	474	11.56	11.06	6.09	1.99	1.19	320
415	-7.21	-11.41	-5.94	-1.27	-1.93	+643	475	-11.47	-10.92	+6.30	-1.95	+1.25	+315
416	7.46	11.50	5.78	1.31	1.90	639	476	11.38	10.78	6.50	1.91	1.30	310
417	7.71	11.59	5.63	1.36	1.87	635	477	11.29	10.64	6.70	1.87	1.35	304
418	7.95	11.68	5.47	1.40	1.84	631	478	11.19	10.49	6.90	1.83	1.40	299
419	8.18	11.77	5.31	1.45	1.81	626	479	11.09	10.34	7.10	1.78	1.45	294
420	-8.40	-11.85	-5.15	-1.49	-1.78	+622	480	-10.99	-10.19	+7.30	-1.74	+1.50	+288

($\rho. c. o$) is expressed in units of the seventh place of decimals.

TABLE V, PART I.—Arg. I. *Action of Uranus.* Constant of ($\rho. c. o$) = 200.

Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	($\rho. c. o$)	Arg.	(v. c. o)	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	($\rho. c. o$)
	"	"	"	"	"			"	"	"	"	"	
480	-10.99	-10.19	+7.30	-1.74	+1.50	+288	540	-1.17	+3.37	+11.45	+1.57	+1.14	+63
481	10.88	10.03	7.50	1.69	1.54	283	541	1.00	3.60	11.36	1.60	1.08	61
482	10.76	9.86	7.69	1.64	1.59	278	542	0.83	3.83	11.27	1.63	1.03	59
483	10.65	9.70	7.87	1.59	1.63	273	543	0.66	4.05	11.18	1.66	0.97	57
484	10.53	9.53	8.06	1.54	1.67	268	544	0.49	4.27	11.08	1.68	0.91	55
485	-10.41	-9.35	+8.24	-1.49	+1.71	+263	545	-0.32	+4.49	+10.97	+1.70	+0.86	+53
486	10.28	9.17	8.42	1.44	1.75	258	546	-0.15	4.71	10.86	1.72	0.80	51
487	10.15	8.99	8.60	1.38	1.79	253	547	+0.02	4.92	10.74	1.74	0.74	49
488	10.02	8.81	8.77	1.33	1.82	248	548	0.18	5.13	10.62	1.76	0.68	48
489	9.89	8.62	8.94	1.27	1.86	244	549	0.35	5.34	10.50	1.77	0.62	46
490	-9.75	-8.43	+9.10	-1.22	+1.89	+239	550	+0.51	+5.54	+10.37	+1.78	+0.56	+44
491	9.61	8.23	9.27	1.16	1.92	234	551	0.67	5.74	10.24	1.79	0.50	43
492	9.47	8.03	9.43	1.10	1.95	229	552	0.83	5.94	10.10	1.80	0.44	41
493	9.32	7.83	9.58	1.04	1.98	224	553	0.99	6.13	9.96	1.81	0.38	40
494	9.17	7.63	9.73	0.98	2.00	220	554	1.14	6.32	9.81	1.81	0.32	38
495	-9.02	-7.42	+9.88	-0.92	+2.03	+215	555	+1.29	+6.51	+9.66	+1.82	+0.26	+36
496	8.87	7.21	10.02	0.86	2.05	211	556	1.44	6.69	9.51	1.82	0.20	35
497	8.72	7.00	10.16	0.79	2.06	206	557	1.59	6.87	9.35	1.82	0.14	34
498	8.56	6.78	10.29	0.73	2.08	202	558	1.74	7.05	9.19	1.81	0.08	32
499	8.40	6.56	10.42	0.67	2.10	198	559	1.89	7.22	9.02	1.81	+0.02	31
500	-8.24	-6.34	+10.55	-0.60	+2.11	+193	560	+2.03	+7.38	+8.85	+1.80	-0.04	+30
501	8.08	6.12	10.67	0.54	2.12	189	561	2.17	7.54	8.68	1.79	0.10	29
502	7.92	5.89	10.78	0.48	2.13	185	562	2.31	7.70	8.50	1.78	0.16	28
503	7.76	5.66	10.89	0.41	2.14	181	563	2.45	7.85	8.32	1.76	0.22	26
504	7.59	5.43	11.00	0.35	2.14	176	564	2.58	8.00	8.14	1.75	0.28	25
505	-7.42	-5.20	+11.10	-0.28	+2.15	+172	565	+2.71	+8.15	+7.95	+1.73	-0.34	+24
506	7.25	4.97	11.20	0.21	2.15	168	566	2.84	8.29	7.76	1.71	0.39	23
507	7.08	4.73	11.29	0.15	2.15	164	567	2.97	8.42	7.57	1.69	0.45	22
508	6.90	4.49	11.38	0.08	2.15	160	568	3.10	8.55	7.37	1.67	0.50	22
509	6.73	4.25	11.47	-0.02	2.14	157	569	3.22	8.68	7.17	1.65	0.55	21
510	-6.56	-4.01	+11.55	+0.04	+2.14	+153	570	+3.34	+8.80	+6.97	+1.62	-0.61	+20
511	6.38	3.76	11.62	0.11	2.13	149	571	3.46	8.91	6.76	1.59	0.66	19
512	6.20	3.52	11.69	0.17	2.12	145	572	3.58	9.02	6.56	1.56	0.71	18
513	6.03	3.27	11.75	0.23	2.10	142	573	3.69	9.13	6.35	1.53	0.76	18
514	5.85	3.03	11.81	0.30	2.09	138	574	3.80	9.23	6.13	1.50	0.80	17
515	-5.67	-2.78	+11.86	+0.36	+2.07	+135	575	+3.91	+9.33	+5.92	+1.47	-0.85	+16
516	5.49	2.53	11.91	0.42	2.06	131	576	4.01	9.42	5.70	1.43	0.90	16
517	5.31	2.28	11.95	0.48	2.04	128	577	4.12	9.51	5.48	1.39	0.94	15
518	5.13	2.03	11.99	0.54	2.02	124	578	4.22	9.59	5.27	1.35	0.99	15
519	4.95	1.78	12.02	0.60	1.99	121	579	4.32	9.66	5.05	1.31	1.03	14
520	-4.77	-1.53	+12.05	+0.66	+1.97	+118	580	+4.41	+9.73	+4.82	+1.27	-1.07	+14
521	4.59	1.28	12.07	0.72	1.94	114	581	4.51	9.80	4.60	1.23	1.11	13
522	4.40	1.03	12.09	0.77	1.91	111	582	4.60	9.86	4.37	1.18	1.15	13
523	4.22	0.78	12.10	0.83	1.88	108	583	4.68	9.91	4.14	1.14	1.18	12
524	4.04	0.52	12.10	0.88	1.85	105	584	4.77	9.96	3.92	1.09	1.22	12
525	-3.86	-0.27	+12.10	+0.94	+1.82	+102	585	+4.85	+10.00	+3.69	+1.05	-1.25	+12
526	3.68	-0.02	12.09	0.99	1.78	99	586	4.93	10.04	3.46	1.00	1.28	11
527	3.50	+0.23	12.08	1.04	1.74	96	587	5.01	10.07	3.22	0.95	1.31	11
528	3.31	0.48	12.07	1.09	1.70	93	588	5.08	10.10	2.99	0.90	1.34	11
529	3.13	0.72	12.05	1.14	1.66	90	589	5.15	10.12	2.76	0.85	1.36	11
530	-2.95	+0.97	+12.02	+1.19	+1.62	+88	590	+5.22	+10.13	+2.53	+0.80	-1.38	+10
531	2.77	1.22	11.98	1.23	1.58	85	591	5.29	10.14	2.30	0.75	1.41	10
532	2.59	1.46	11.94	1.28	1.53	82	592	5.35	10.15	2.06	0.70	1.43	10
533	2.41	1.71	11.90	1.32	1.49	80	593	5.41	10.15	1.83	0.64	1.44	10
534	2.23	1.95	11.85	1.36	1.44	77	594	5.47	10.14	1.60	0.59	1.46	10
535	-2.05	+2.19	+11.80	+1.40	+1.39	+75	595	+5.53	+10.13	+1.36	+0.54	-1.47	+10
536	1.88	2.43	11.74	1.44	1.34	72	596	5.58	10.11	1.13	0.48	1.49	10
537	1.70	2.67	11.67	1.48	1.29	70	597	5.63	10.09	0.90	0.43	1.50	10
538	1.52	2.91	11.60	1.51	1.24	68	598	5.68	10.06	0.67	0.37	1.51	10
539	1.35	3.14	11.53	1.54	1.19	66	599	5.72	10.03	0.44	0.32	1.52	10
540	-1.17	+3.37	+11.45	+1.57	+1.14	+63	600	+5.76	+9.99	+0.21	+0.26	-1.52	+10

($\rho. c. o$) is expressed in units of the seventh place of decimals.

TABLE V, PART II.—Arg. I. *Action of Uranus.*

Arg.	(v. s. 3)	(v. c. 3)	(p. s. 1)	(p. c. 1)	(p. s. 2)	(p. c. 2)	Arg.	(v. s. 3)	(v. c. 3)	(p. s. 1)	(p. c. 1)	(p. s. 2)	(p. c. 2)
	"	"						"	"				
0	-0.05	+0.03	-38	+72	+9	+7	300	-0.13	+0.23	+90	+50	-7	+9
5	0.04	0.04	28	71	9	5	305	0.09	0.25	92	41	5	10
10	0.03	0.05	19	70	9	3	310	-0.04	0.26	93	31	4	10
15	-0.01	0.06	11	68	9	+1	315	0.00	0.27	93	22	-2	10
20	0.00	0.06	-2	64	8	-1	320	+0.05	0.27	91	13	0	10
25	+0.02	+0.06	+5	+60	+7	-3	325	+0.10	+0.26	+89	+5	+2	+9
30	0.04	0.06	12	56	6	4	330	0.14	0.24	86	-3	3	9
35	0.05	0.05	17	50	4	5	335	0.18	0.21	82	10	4	8
40	0.07	0.04	23	44	3	6	340	0.22	0.18	77	16	5	7
45	0.08	+0.02	27	38	+1	6	345	0.25	0.14	72	22	6	6
50	+0.08	0.00	+30	+32	-1	-6	350	+0.27	+0.10	+66	-26	+7	+5
55	0.08	-0.02	33	25	3	6	355	0.28	+0.05	61	29	7	4
60	0.08	0.04	34	18	4	5	360	0.28	0.00	56	32	8	3
65	0.07	0.06	35	11	6	4	365	0.28	-0.05	51	34	8	2
70	0.06	0.07	34	+4	7	3	370	0.27	0.10	47	34	8	+1
75	+0.04	-0.08	+33	-3	-8	-2	375	+0.25	-0.14	+43	-35	+8	0
80	+0.02	0.09	30	9	8	0	380	0.22	0.18	40	36	8	-1
85	0.00	0.10	27	15	9	+2	385	0.18	0.22	38	36	8	2
90	-0.02	0.10	22	20	9	4	390	0.14	0.24	36	37	8	3
95	0.05	0.09	17	25	8	5	395	0.09	0.26	35	38	8	4
100	-0.07	-0.08	+11	-29	-8	+7	400	+0.05	-0.27	+34	-40	+7	-4
105	0.08	0.06	+4	32	7	9	405	0.00	0.28	33	42	7	5
110	0.10	0.04	-3	33	6	10	410	-0.04	0.27	32	46	7	6
115	0.11	-0.02	11	34	4	11	415	0.09	0.25	31	50	6	7
120	0.11	0.00	19	33	2	12	420	0.13	0.23	29	54	6	8
125	-0.11	+0.03	-26	-32	0	+13	425	-0.17	-0.20	+27	-59	+6	-9
130	0.10	0.06	34	29	+2	13	430	0.20	0.17	23	65	5	10
135	0.09	0.08	41	25	4	13	435	0.22	0.13	18	70	4	11
140	0.07	0.10	48	21	6	12	440	0.23	0.09	13	75	3	12
145	0.05	0.12	54	15	8	11	445	0.24	-0.04	+7	80	+2	13
150	-0.02	+0.13	-59	-9	+10	+10	450	-0.24	0.00	-1	-85	0	-14
155	0.00	0.13	64	-2	12	8	455	0.23	+0.04	9	89	-2	14
160	+0.03	0.13	67	+5	13	6	460	0.21	0.08	18	91	3	15
165	0.06	0.13	70	13	14	4	465	0.19	0.11	28	93	5	15
170	0.09	0.11	73	21	15	+2	470	0.16	0.14	38	93	7	15
175	+0.12	+0.09	-74	+30	+15	0	475	-0.13	+0.16	-47	-92	-10	-14
180	0.14	0.07	74	38	15	-3	480	0.10	0.17	57	90	12	13
185	0.15	+0.04	73	47	15	5	485	0.06	0.18	66	87	14	12
190	0.16	0.00	72	56	14	7	490	-0.02	0.18	75	83	15	11
195	0.16	-0.03	69	65	13	10	495	+0.01	0.18	84	78	17	9
200	+0.16	-0.06	-65	+73	+11	-12	500	+0.04	+0.16	-92	-72	-18	-7
205	0.15	0.10	60	81	9	13	505	0.07	0.14	99	65	19	5
210	0.13	0.13	54	88	7	14	510	0.09	0.12	105	58	20	-2
215	0.10	0.16	47	95	4	15	515	0.11	0.10	110	50	20	0
220	0.07	0.18	39	101	+2	16	520	0.12	0.07	114	41	20	+3
225	+0.04	-0.19	-31	+106	-1	-16	525	+0.12	+0.04	-117	-32	-19	+6
230	0.00	0.20	22	109	3	15	530	0.12	+0.02	119	22	18	8
235	-0.04	0.20	12	112	6	14	535	0.11	-0.01	120	12	17	10
240	0.08	0.19	-2	114	8	13	540	0.10	0.03	120	-2	15	12
245	0.12	0.18	+8	114	10	12	545	0.09	0.05	118	+8	13	14
250	-0.16	-0.16	+18	+113	-11	-10	550	+0.07	-0.06	-115	+17	-11	+15
255	0.19	0.13	28	111	12	8	555	0.05	0.07	111	26	8	16
260	0.21	0.09	38	108	13	6	560	+0.02	0.07	106	35	6	16
265	0.23	0.05	47	103	14	3	565	0.00	0.07	100	43	3	17
270	0.24	-0.01	56	98	14	-1	570	-0.02	0.07	93	51	-1	16
275	-0.24	+0.04	+64	+92	-13	+1	575	-0.03	-0.06	-85	+57	+2	+15
280	0.24	0.08	71	84	12	3	580	0.04	0.04	76	62	4	14
285	0.22	0.12	77	76	11	5	585	0.05	0.03	67	67	6	13
290	0.20	0.16	83	68	10	7	590	0.06	-0.01	57	70	7	11
295	0.17	0.20	87	59	9	8	595	0.06	+0.01	48	72	8	9
300	-0.13	+0.23	+90	+50	-7	+9	600	-0.05	+0.03	-38	+72	+9	+7

The quantities ($p. s. 1$), ($p. c. 1$), etc., are expressed in units of the seventh place of decimals.

TABLE VI, PART I.—Arg. II. *Action of Saturn.* Constant of ($\rho. c. o$) = 400.

Arg.	($v. c. o$)	($\rho. c. o$)	Arg.	($v. c. o$)	($\rho. c. o$)	Arg.	($v. c. o$)	($\rho. c. o$)	Arg.	($v. c. o$)	($\rho. c. o$)	Arg.	($v. c. o$)	($\rho. c. o$)
	"			"			"			"			"	
0	0.00	+801	60	+10.76	+722	120	+17.58	+520	180	+17.74	+274	240	+11.02	+80
1	+0.19	801	61	10.92	719	121	17.64	516	181	17.68	270	241	10.86	78
2	0.38	801	62	11.07	717	122	17.70	512	182	17.62	266	242	10.70	76
3	0.57	800	63	11.23	714	123	17.75	507	183	17.55	262	243	10.54	73
4	0.76	800	64	11.38	712	124	17.81	503	184	17.49	258	244	10.38	71
5	+0.95	+800	65	+11.53	+709	125	+17.86	+499	185	+17.42	+254	245	+10.22	+69
6	1.14	800	66	11.68	706	126	17.92	495	186	17.35	250	246	10.05	67
7	1.33	800	67	11.83	704	127	17.97	491	187	17.28	246	247	9.88	65
8	1.52	799	68	11.98	701	128	18.01	487	188	17.21	242	248	9.72	62
9	1.71	799	69	12.13	698	129	18.06	483	189	17.13	239	249	9.55	60
10	+1.90	+799	70	+12.27	+695	130	+18.10	+479	190	+17.06	+235	250	+9.38	+58
11	2.09	798	71	12.42	692	131	18.15	475	191	16.98	231	251	9.21	56
12	2.28	798	72	12.56	689	132	18.19	471	192	16.90	228	252	9.04	54
13	2.47	797	73	12.70	687	133	18.23	466	193	16.82	224	253	8.87	52
14	2.66	797	74	12.84	684	134	18.26	462	194	16.73	221	254	8.69	50
15	+2.85	+796	75	+12.98	+681	135	+18.30	+458	195	+16.65	+217	255	+8.52	+48
16	3.04	795	76	13.11	678	136	18.33	454	196	16.56	213	256	8.34	46
17	3.23	794	77	13.25	675	137	18.36	450	197	16.47	210	257	8.17	45
18	3.42	794	78	13.38	672	138	18.39	446	198	16.38	206	258	7.99	43
19	3.60	793	79	13.51	669	139	18.41	442	199	16.28	203	259	7.81	42
20	+3.79	+792	80	+13.64	+666	140	+18.44	+438	200	+16.19	+199	260	+7.63	+40
21	3.98	791	81	13.77	663	141	18.46	434	201	16.09	196	261	7.45	38
22	4.16	790	82	13.90	659	142	18.48	430	202	15.99	192	262	7.27	37
23	4.35	789	83	14.03	655	143	18.50	425	203	15.89	189	263	7.09	35
24	4.54	788	84	14.16	652	144	18.52	421	204	15.79	185	264	6.91	34
25	+4.72	+787	85	+14.28	+649	145	+18.53	+417	205	+15.68	+182	265	+6.73	+32
26	4.91	786	86	14.40	646	146	18.54	413	206	15.58	179	266	6.54	30
27	5.09	785	87	14.52	642	147	18.55	409	207	15.47	175	267	6.36	29
28	5.28	784	88	14.64	639	148	18.56	404	208	15.36	172	268	6.17	28
29	5.46	782	89	14.76	635	149	18.56	400	209	15.25	168	269	5.99	26
30	+5.64	+781	90	+14.88	+632	150	+18.57	+396	210	+15.14	+165	270	+5.80	+25
31	5.82	780	91	14.99	628	151	18.57	392	211	15.02	162	271	5.61	24
32	6.00	778	92	15.11	625	152	18.57	388	212	14.90	158	272	5.42	23
33	6.18	777	93	15.22	621	153	18.57	383	213	14.79	155	273	5.24	22
34	6.36	776	94	15.33	618	154	18.56	379	214	14.67	152	274	5.05	21
35	+6.54	+774	95	+15.44	+614	155	+18.56	+375	215	+14.55	+149	275	+4.86	+20
36	6.72	772	96	15.54	610	156	18.55	371	216	14.42	146	276	4.67	19
37	6.90	771	97	15.65	607	157	18.54	367	217	14.30	143	277	4.48	18
38	7.08	769	98	15.75	603	158	18.52	362	218	14.17	140	278	4.28	18
39	7.26	768	99	15.85	600	159	18.51	358	219	14.04	137	279	4.09	17
40	+7.43	+766	100	+15.95	+596	160	+18.49	+354	220	+13.91	+134	280	+3.90	+16
41	7.61	764	101	16.05	592	161	18.48	350	221	13.78	131	281	3.71	15
42	7.78	762	102	16.14	589	162	18.46	346	222	13.65	128	282	3.52	14
43	7.95	760	103	16.24	585	163	18.43	342	223	13.52	125	283	3.32	14
44	8.13	758	104	16.33	582	164	18.41	338	224	13.38	122	284	3.13	13
45	+8.30	+756	105	+16.42	+578	165	+18.38	+334	225	+13.25	+119	285	+2.93	+12
46	8.47	754	106	16.51	574	166	18.35	330	226	13.11	116	286	2.74	11
47	8.64	752	107	16.60	570	167	18.32	326	227	12.97	113	287	2.54	11
48	8.81	750	108	16.69	567	168	18.29	322	228	12.83	110	288	2.35	10
49	8.98	748	109	16.77	563	169	18.25	318	229	12.68	108	289	2.15	10
50	+9.14	+746	110	+16.85	+559	170	+18.22	+314	230	+12.54	+105	290	+1.96	+9
51	9.31	744	111	16.93	555	171	18.18	310	231	12.40	102	291	1.76	9
52	9.48	742	112	17.01	551	172	18.14	306	232	12.25	100	292	1.57	8
53	9.64	740	113	17.09	548	173	18.09	302	233	12.10	97	293	1.37	8
54	9.80	737	114	17.16	544	174	18.05	298	234	11.95	94	294	1.17	8
55	+9.97	+735	115	+17.24	+540	175	+18.00	+294	235	+11.80	+92	295	+0.98	+8
56	10.13	732	116	17.31	536	176	17.95	290	236	11.64	90	296	0.78	8
57	10.29	730	117	17.38	532	177	17.90	286	237	11.49	87	297	0.58	8
58	10.45	727	118	17.44	528	178	17.85	282	238	11.34	85	298	0.39	7
59	10.61	725	119	17.51	524	179	17.79	278	239	11.18	82	299	+0.19	7
60	+10.76	+722	120	+17.58	+520	180	+17.74	+274	240	+11.02	+80	300	0.00	+7

($\rho. c. o$) is expressed in units of the seventh place of decimals.

TABLE VI, PART I.—Arg. II. *Action of Saturn.* Constant of ($\rho. c. o$) = 400.

Arg.	($v. c. o$)	($\rho. c. o$)	Arg.	($v. c. o$)	($\rho. c. o$)	Arg.	($v. c. o$)	($\rho. c. o$)	Arg.	($v. c. o$)	($\rho. c. o$)	Arg.	($v. c. o$)	($\rho. c. o$)
300	"		360	"		420	"		480	"		540	"	
301	0.00	+ 7	361	11.03	+ 80	421	17.73	+ 274	481	17.57	+ 520	541	10.76	+ 722
302	0.20	7	362	11.18	82	422	17.79	278	482	17.50	524	542	10.61	725
303	0.40	7	363	11.34	85	423	17.84	282	483	17.44	528	543	10.45	727
304	0.60	8	364	11.50	87	424	17.89	286	484	17.37	532	544	10.29	730
	0.79	8		11.65	90		17.94	290		17.30	536		10.13	732
305	0.99	+ 8	365	11.80	+ 92	425	17.99	+ 294	485	17.23	+ 540	545	9.97	+ 735
306	1.18	8	366	11.95	94	426	18.04	298	486	17.16	544	546	9.81	737
307	1.38	8	367	12.10	97	427	18.08	302	487	17.08	548	547	9.64	740
308	1.58	8	368	12.25	100	428	18.13	306	488	17.01	551	548	9.48	742
309	1.77	9	369	12.40	102	429	18.17	310	489	16.93	555	549	9.31	744
310	1.97	+ 9	370	12.54	+ 105	430	18.21	+ 314	490	16.85	+ 559	550	9.15	+ 746
311	2.16	10	371	12.69	108	431	18.25	318	491	16.77	563	551	8.98	748
312	2.36	10	372	12.83	110	432	18.28	322	492	16.68	567	552	8.81	750
313	2.55	11	373	12.97	113	433	18.31	326	493	16.60	570	553	8.64	752
314	2.75	11	374	13.11	116	434	18.34	330	494	16.51	574	554	8.47	754
315	2.94	+ 12	375	13.25	+ 119	435	18.37	+ 334	495	16.42	+ 578	555	8.30	+ 756
316	3.14	13	376	13.39	122	436	18.40	338	496	16.33	582	556	8.13	758
317	3.33	14	377	13.52	125	437	18.42	342	497	16.24	585	557	7.96	760
318	3.52	14	378	13.65	128	438	18.45	346	498	16.14	589	558	7.78	762
319	3.72	15	379	13.79	131	439	18.47	350	499	16.04	592	559	7.61	764
320	3.91	+ 16	380	13.92	+ 134	440	18.49	+ 354	500	15.95	+ 596	560	7.44	+ 766
321	4.10	17	381	14.05	137	441	18.50	358	501	15.85	600	561	7.26	768
322	4.29	18	382	14.17	140	442	18.52	362	502	15.74	603	562	7.08	769
323	4.49	18	383	14.30	143	443	18.53	367	503	15.64	607	563	6.90	771
324	4.68	19	384	14.42	146	444	18.54	371	504	15.54	610	564	6.73	772
325	4.87	+ 20	385	14.55	+ 149	445	18.55	+ 375	505	15.43	+ 614	565	6.55	+ 774
326	5.06	21	386	14.67	152	446	18.56	379	506	15.32	618	566	6.37	776
327	5.24	22	387	14.79	155	447	18.56	383	507	15.21	621	567	6.19	777
328	5.43	23	388	14.91	158	448	18.56	388	508	15.10	625	568	6.01	778
329	5.62	24	389	15.02	162	449	18.56	392	509	14.99	628	569	5.83	780
330	5.81	+ 25	390	15.14	+ 165	450	18.56	+ 396	510	14.87	+ 632	570	5.64	+ 781
331	5.99	26	391	15.25	168	451	18.56	400	511	14.76	635	571	5.46	782
332	6.18	28	392	15.36	172	452	18.55	404	512	14.64	639	572	5.28	784
333	6.36	29	393	15.47	175	453	18.54	409	513	14.52	642	573	5.10	785
334	6.55	30	394	15.58	179	454	18.53	413	514	14.40	646	574	4.91	786
335	6.73	+ 32	395	15.68	+ 182	455	18.52	+ 417	515	14.28	+ 649	575	4.73	+ 787
336	6.92	34	396	15.78	185	456	18.51	421	516	14.15	652	576	4.54	788
337	7.10	35	397	15.89	189	457	18.49	425	517	14.03	655	577	4.36	789
338	7.28	37	398	15.99	192	458	18.47	430	518	13.90	659	578	4.17	790
339	7.46	38	399	16.09	196	459	18.45	434	519	13.77	663	579	3.98	791
340	7.64	+ 40	400	16.18	+ 199	460	18.43	+ 438	520	13.64	+ 666	580	3.80	+ 792
341	7.82	42	401	16.28	203	461	18.41	442	521	13.51	669	581	3.61	793
342	8.00	43	402	16.37	206	462	18.38	446	522	13.38	672	582	3.42	794
343	8.17	45	403	16.46	210	463	18.35	450	523	13.24	675	583	3.23	794
344	8.35	46	404	16.55	213	464	18.32	454	524	13.11	678	584	3.05	795
345	8.52	+ 48	405	16.64	+ 217	465	18.29	+ 458	525	12.97	+ 681	585	2.86	+ 796
346	8.70	50	406	16.73	221	466	18.26	462	526	12.84	684	586	2.67	797
347	8.87	52	407	16.81	224	467	18.22	466	527	12.70	687	587	2.48	797
348	9.04	54	408	16.89	228	468	18.18	471	528	12.56	689	588	2.29	798
349	9.22	56	409	16.97	231	469	18.14	475	529	12.41	692	589	2.10	798
350	9.39	+ 58	410	17.05	+ 235	470	18.10	+ 479	530	12.27	+ 695	590	1.91	+ 799
351	9.56	60	411	17.13	239	471	18.05	483	531	12.12	698	591	1.72	799
352	9.72	62	412	17.20	242	472	18.01	487	532	11.98	701	592	1.53	799
353	9.89	65	413	17.27	246	473	17.96	491	533	11.83	704	593	1.34	800
354	10.06	67	414	17.34	250	474	17.91	495	534	11.68	706	594	1.15	800
355	10.22	+ 69	415	17.41	+ 254	475	17.86	+ 499	535	11.53	+ 709	595	0.96	+ 800
356	10.38	71	416	17.48	258	476	17.80	503	536	11.38	712	596	0.77	800
357	10.55	73	417	17.55	262	477	17.75	507	537	11.23	714	597	0.58	800
358	10.71	76	418	17.61	266	478	17.69	512	538	11.08	717	598	0.38	801
359	10.87	78	419	17.67	270	479	17.63	516	539	10.92	719	599	0.19	801
360	11.03	+ 80	420	17.73	+ 274	480	17.57	+ 520	540	10.76	+ 722	600	0.00	+ 801

($\rho. c. o$) is expressed in units of the seventh place of decimals.

TABLE VI, PART II.—Arg. II. *Action of Saturn.*

Arg.	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(ρ. s. 1)	(ρ. c. 1)	Arg.	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(ρ. s. 1)	(ρ. c. 1)
0	—0.15	—0.16	—0.01	—0.03	—12	—7	800	+0.84	—0.57	+0.03	+0.02	—6	—7
5	0.10	0.11	0.01	0.03	13	6	805	0.87	0.55	0.02	0.02	7	7
10	—0.05	—0.05	0.01	0.03	14	5	810	0.89	0.52	0.02	0.02	8	7
15	0.00	+0.02	0.01	0.03	14	4	815	0.91	0.49	0.02	0.02	8	6
20	+0.04	0.08	—0.01	0.03	15	3	820	0.92	0.46	0.02	0.01	9	6
25	+0.08	+0.15	0.00	—0.02	—16	—2	825	+0.92	—0.42	+0.01	+0.01	—10	—6
30	0.11	0.22	0.00	0.02	17	1	830	0.92	0.38	0.01	+0.01	11	5
35	0.14	0.28	0.00	0.02	18	—1	835	0.91	0.34	0.01	0.00	12	5
40	0.17	0.35	0.00	0.02	19	0	840	0.89	0.30	0.01	0.00	13	6
45	0.19	0.41	0.00	0.01	20	0	845	0.87	0.26	0.01	—0.01	14	6
50	+0.20	+0.48	0.00	—0.01	—21	+1	850	+0.84	—0.22	+0.01	—0.01	—15	6
55	0.21	0.54	0.00	0.00	21	1	855	0.80	0.18	0.01	0.02	16	7
60	0.22	0.60	0.00	0.00	22	2	860	0.76	0.13	0.01	0.02	17	7
65	0.22	0.65	0.00	0.00	23	1	865	0.71	0.09	0.01	0.02	18	8
70	0.21	0.70	—0.01	+0.01	23	1	870	0.66	0.06	0.02	0.03	19	8
75	+0.21	+0.75	—0.01	+0.01	—24	+1	875	+0.60	—0.02	+0.02	—0.03	—20	—9
80	0.20	0.79	0.01	0.02	24	+1	880	0.53	+0.01	0.02	0.04	21	10
85	0.18	0.82	0.01	0.02	25	0	885	0.46	0.04	0.02	0.04	21	11
90	0.16	0.85	0.02	0.02	25	0	890	0.39	0.06	0.03	0.04	22	12
95	0.14	0.87	0.02	0.02	25	—1	895	0.32	0.08	0.03	0.04	22	13
100	+0.11	+0.89	—0.02	+0.02	—26	—2	400	+0.24	+0.10	+0.03	—0.05	—23	—14
105	0.09	0.90	0.02	0.02	26	3	405	0.16	0.11	0.04	0.05	23	15
110	0.06	0.91	0.03	0.02	25	4	410	+0.07	0.12	0.04	0.05	23	16
115	+0.03	0.91	0.03	0.02	25	5	415	—0.01	0.13	0.04	0.05	23	17
120	0.00	0.90	0.03	0.02	25	5	420	0.09	0.13	0.05	0.04	23	18
125	—0.02	+0.88	—0.04	+0.02	—24	—6	425	—0.18	+0.12	+0.05	—0.04	—23	—19
130	0.05	0.86	0.04	0.02	24	7	430	0.26	0.11	0.05	0.04	23	20
135	0.08	0.83	0.04	0.02	23	8	435	0.34	0.09	0.05	0.04	23	21
140	0.10	0.80	0.04	0.01	23	8	440	0.41	0.07	0.06	0.04	23	22
145	0.12	0.76	0.04	0.01	22	9	445	0.49	0.05	0.06	0.03	22	23
150	—0.14	+0.71	—0.04	+0.01	—21	—10	450	—0.56	+0.03	+0.06	—0.03	—21	—24
155	0.15	0.66	0.04	0.00	20	11	455	0.62	0.00	0.05	0.03	20	25
160	0.16	0.61	0.04	0.00	19	12	460	0.68	—0.04	0.05	0.02	19	26
165	0.17	0.55	0.03	0.00	18	12	465	0.74	0.07	0.05	0.02	19	26
170	0.17	0.48	0.03	0.00	17	13	470	0.79	0.10	0.05	0.02	18	27
175	0.17	+0.42	—0.03	—0.01	—16	—13	475	—0.83	—0.14	+0.04	—0.01	—17	—27
180	0.16	0.35	0.02	0.01	15	14	480	0.87	0.18	0.04	0.01	16	27
185	0.15	0.28	0.02	0.01	14	14	485	0.90	0.22	0.04	0.01	15	27
190	0.14	0.21	0.02	0.01	13	14	490	0.92	0.26	0.03	—0.01	15	27
195	0.12	0.14	0.01	0.02	12	15	495	0.94	0.30	0.03	0.00	14	27
200	—0.09	+0.07	—0.01	—0.02	—10	—15	500	—0.95	—0.33	+0.02	0.00	—14	—27
205	0.06	0.00	0.00	0.02	9	15	505	0.95	0.36	0.02	0.00	13	27
210	—0.03	—0.07	0.00	0.02	8	16	510	0.95	0.39	0.01	0.00	12	27
215	+0.01	0.13	+0.01	0.01	7	16	515	0.94	0.42	+0.01	0.00	11	26
220	0.05	0.20	0.01	0.01	7	15	520	0.92	0.45	0.00	0.00	11	26
225	+0.10	—0.26	+0.02	—0.01	—6	—15	525	—0.90	—0.47	0.00	—0.01	—10	—25
230	0.15	0.31	0.02	0.01	5	15	530	0.87	0.48	0.00	0.01	9	24
235	0.20	0.37	0.03	—0.01	5	14	535	0.84	0.49	—0.01	0.01	9	23
240	0.25	0.42	0.03	0.00	4	14	540	0.80	0.50	0.01	0.01	9	22
245	0.31	0.46	0.03	0.00	4	13	545	0.76	0.50	0.01	0.02	9	21
250	+0.36	—0.50	+0.04	0.00	—3	—13	550	—0.71	—0.50	—0.02	—0.02	—9	—20
255	0.42	0.53	0.04	0.00	3	12	555	0.66	0.49	0.02	0.02	8	19
260	0.47	0.56	0.04	+0.01	3	12	560	0.61	0.47	0.02	0.02	9	18
265	0.53	0.58	0.04	0.01	3	11	565	0.55	0.45	0.02	0.03	9	16
270	0.58	0.59	0.04	0.02	3	11	570	0.50	0.43	0.02	0.03	9	15
275	+0.63	—0.60	+0.04	+0.02	—3	—10	575	—0.44	—0.40	—0.02	—0.03	—9	—14
280	0.68	0.61	0.04	0.02	3	9	580	0.38	0.36	0.02	0.03	9	12
285	0.73	0.61	0.03	0.02	4	9	585	0.32	0.32	0.02	0.03	10	11
290	0.77	0.60	0.03	0.02	4	8	590	0.26	0.27	0.02	0.03	10	10
295	0.81	0.59	0.03	0.02	5	8	595	0.20	0.22	0.02	0.03	11	8
300	+0.84	—0.57	+0.03	+0.02	—6	—7	600	—0.15	—0.16	—0.01	—0.03	—12	—7

The quantities (ρ. s. 1) and (ρ. c. 1) are expressed in units of the seventh place of decimals.

TABLE VII, PART I.—Arg. III. *Action of Jupiter.* Constant of ($\rho. c. o$) = 700.

Arg.	($v. c. o$)	($\rho. c. o$)	Arg.	($v. c. o$)	($\rho. c. o$)	Arg.	($v. c. o$)	($\rho. c. o$)	Arg.	($v. c. o$)	($\rho. c. o$)	Arg.	($v. c. o$)	($\rho. c. o$)
0	"		60	"		120	"		180	"		240	"	
1	+ 0.00	+1402	61	+20.05	+1267	121	+32.46	+916	181	+32.47	+483	241	+20.07	+133
2	+ 0.36	1402	62	20.34	1263	122	32.57	909	182	32.36	476	242	19.78	129
3	0.72	1402	63	20.63	1258	123	32.67	902	183	32.24	469	243	19.49	124
4	1.08	1402	64	20.91	1254	124	32.77	895	184	32.12	462	244	19.20	120
	1.43	1401		21.19	1250		32.87	888		32.00	455		18.90	116
5	+ 1.79	+1401	65	+21.47	+1245	125	+32.97	+881	185	+31.88	+448	245	+18.60	+112
6	2.15	1401	66	21.75	1240	126	33.06	874	186	31.75	441	246	18.30	108
7	2.50	1400	67	22.02	1236	127	33.14	867	187	31.61	434	247	18.00	104
8	2.86	1400	68	22.29	1231	128	33.23	859	188	31.48	428	248	17.69	100
9	3.22	1399	69	22.56	1226	129	33.31	852	189	31.34	421	249	17.39	97
10	+ 3.57	+1398	70	+22.83	+1221	130	+33.38	+845	190	+31.19	+414	250	+17.08	+93
11	3.92	1397	71	23.09	1216	131	33.46	838	191	31.05	407	251	16.77	89
12	4.28	1396	72	23.36	1211	132	33.53	831	192	30.90	401	252	16.46	86
13	4.63	1395	73	23.62	1206	133	33.59	823	193	30.74	394	253	16.14	82
14	4.99	1394	74	23.87	1201	134	33.65	816	194	30.58	388	254	15.83	79
15	+ 5.34	+1393	75	+24.13	+1196	135	+33.71	+809	195	+30.42	+381	255	+15.51	+76
16	5.69	1392	76	24.38	1191	136	33.77	802	196	30.26	374	256	15.19	73
17	6.05	1391	77	24.63	1185	137	33.82	794	197	30.09	368	257	14.87	70
18	6.40	1390	78	24.87	1180	138	33.86	787	198	29.92	362	258	14.54	67
19	6.75	1388	79	25.12	1174	139	33.91	779	199	29.75	355	259	14.22	64
20	+ 7.10	+1387	80	+25.36	+1169	140	+33.95	+772	200	+29.57	+349	260	+13.89	+61
21	7.45	1385	81	25.59	1164	141	33.98	765	201	29.39	343	261	13.57	58
22	7.79	1384	82	25.83	1158	142	34.01	758	202	29.21	336	262	13.24	55
23	8.14	1382	83	26.06	1152	143	34.04	750	203	29.02	330	263	12.91	52
24	8.49	1380	84	26.29	1147	144	34.07	743	204	28.83	324	264	12.58	50
25	+ 8.83	+1378	85	+26.52	+1141	145	+34.09	+736	205	+28.64	+318	265	+12.24	+47
26	9.18	1376	86	26.74	1135	146	34.10	729	206	28.44	312	266	11.91	44
27	9.52	1374	87	26.96	1130	147	34.12	721	207	28.24	306	267	11.57	42
28	9.86	1372	88	27.18	1124	148	34.13	714	208	28.04	300	268	11.24	40
29	10.20	1370	89	27.39	1118	149	34.13	706	209	27.84	294	269	10.90	37
30	+ 10.54	+1368	90	+27.61	+1112	150	+34.14	+699	210	+27.63	+288	270	+10.56	+35
31	10.88	1366	91	27.82	1106	151	34.13	692	211	27.41	282	271	10.22	33
32	11.22	1363	92	28.02	1100	152	34.13	684	212	27.20	276	272	9.88	30
33	11.56	1360	93	28.22	1094	153	34.12	677	213	26.98	270	273	9.53	28
34	11.89	1358	94	28.42	1088	154	34.11	669	214	26.76	265	274	9.19	26
35	+ 12.23	+1355	95	+28.62	+1082	155	+34.09	+662	215	+26.54	+259	275	+8.84	+24
36	12.56	1352	96	28.81	1076	156	34.07	655	216	26.31	253	276	8.50	22
37	12.89	1350	97	29.00	1069	157	34.05	648	217	26.08	248	277	8.15	20
38	13.22	1347	98	29.19	1063	158	34.02	640	218	25.85	242	278	7.80	18
39	13.55	1344	99	29.37	1056	159	33.99	633	219	25.62	236	279	7.45	17
40	+ 13.88	+1341	100	+29.55	+1050	160	+33.95	+626	220	+25.38	+231	280	+7.10	+15
41	14.20	1338	101	29.73	1043	161	33.91	619	221	25.14	226	281	6.75	14
42	14.53	1335	102	29.90	1037	162	33.87	612	222	24.89	220	282	6.40	12
43	14.85	1332	103	30.07	1030	163	33.82	604	223	24.65	215	283	6.05	11
44	15.17	1328	104	30.24	1024	164	33.77	596	224	24.40	209	284	5.70	10
45	+ 15.49	+1325	105	+30.41	+1017	165	+33.72	+589	225	+24.15	+204	285	+5.35	+9
46	15.81	1322	106	30.57	1010	166	33.66	582	226	23.89	199	286	4.99	8
47	16.12	1318	107	30.72	1004	167	33.60	574	227	23.64	194	287	4.64	7
48	16.44	1314	108	30.88	997	168	33.53	567	228	23.38	189	288	4.28	6
49	16.75	1311	109	31.03	991	169	33.46	560	229	23.12	184	289	3.93	5
50	+ 17.06	+1307	110	+31.18	+984	170	+33.39	+553	230	+22.85	+179	290	+3.57	+4
51	17.37	1303	111	31.32	977	171	33.32	546	231	22.59	174	291	3.22	3
52	17.67	1300	112	31.46	970	172	33.24	539	232	22.32	169	292	2.86	2
53	17.98	1296	113	31.60	964	173	33.16	532	233	22.04	164	293	2.51	2
54	18.28	1292	114	31.73	957	174	33.07	525	234	21.77	160	294	2.15	1
55	+ 18.58	+1288	115	+31.86	+950	175	+32.98	+518	235	+21.49	+155	295	+1.79	+1
56	18.88	1284	116	31.99	943	176	32.88	511	236	21.21	150	296	1.44	1
57	19.18	1280	117	32.11	936	177	32.79	504	237	20.93	146	297	1.08	0
58	19.47	1276	118	32.23	930	178	32.69	497	238	20.65	142	298	0.72	0
59	19.76	1271	119	32.35	923	179	32.58	490	239	20.36	137	299	0.36	0
60	+ 20.05	+1267	120	+32.46	+916	180	+32.47	+483	240	+20.07	+133	300	0.00	0

($\rho. c. o$) is expressed in units of the seventh place of decimals.

TABLE VII, PART I.—Arg. III. *Action of Jupiter.* Constant of ($p. c. o$) = 700.

Arg.	($v. c. o$)	($p. c. o$)	Arg.	($v. c. o$)	($p. c. o$)	Arg.	($v. c. o$)	($p. c. o$)	Arg.	($v. c. o$)	($p. c. o$)	Arg.	($v. c. o$)	($p. c. o$)
	"			"			"			"			"	
300	0.00	0	360	-20.07	+133	420	-32.48	+483	480	-32.47	+916	540	20.05	+1267
301	0.35	0	361	20.36	137	421	32.59	490	481	32.36	923	541	19.76	1271
302	0.71	0	362	20.65	142	422	32.69	497	482	32.24	930	542	19.47	1276
303	1.07	0	363	20.93	146	423	32.79	504	483	32.12	936	543	19.17	1280
304	1.43	+1	364	21.21	150	424	32.89	511	484	32.00	943	544	18.88	1284
305	-1.78	+1	365	-21.49	+155	425	-32.99	+518	485	-31.87	+950	545	18.58	+1288
306	2.14	1	366	21.77	160	426	33.08	525	486	31.74	957	546	18.28	1292
307	2.50	2	367	22.04	164	427	33.16	532	487	31.60	964	547	17.97	1296
308	2.85	2	368	22.31	169	428	33.25	539	488	31.47	970	548	17.67	1300
309	3.21	3	369	22.58	174	429	33.33	546	489	31.33	977	549	17.36	1303
310	-3.56	+4	370	-22.85	+179	430	-33.40	+553	490	-31.18	+984	550	17.05	+1307
311	3.92	5	371	23.12	184	431	33.47	560	491	31.03	991	551	16.74	1311
312	4.27	6	372	23.38	189	432	33.54	567	492	30.88	997	552	16.43	1314
313	4.63	7	373	23.64	194	433	33.61	574	493	30.73	1004	553	16.12	1318
314	4.98	8	374	23.89	199	434	33.67	582	494	30.57	1010	554	15.80	1322
315	-5.34	+9	375	-24.15	+204	435	-33.73	+589	495	-30.41	+1017	555	15.48	+1325
316	5.69	10	376	24.40	209	436	33.78	596	496	30.25	1024	556	15.16	1328
317	6.04	11	377	24.65	215	437	33.83	604	497	30.08	1030	557	14.84	1332
318	6.39	12	378	24.89	220	438	33.88	612	498	29.91	1037	558	14.52	1335
319	6.74	14	379	25.14	226	439	33.92	619	499	29.73	1043	559	14.20	1338
320	-7.09	+15	380	-25.38	+231	440	-33.96	+626	500	-29.56	+1050	560	13.87	+1341
321	7.44	17	381	25.62	236	441	34.00	633	501	29.38	1056	561	13.54	1344
322	7.79	18	382	25.85	242	442	34.03	640	502	29.19	1063	562	13.21	1347
323	8.14	20	383	26.08	248	443	34.06	648	503	29.01	1069	563	12.88	1350
324	8.49	22	384	26.31	253	444	34.08	655	504	28.82	1076	564	12.55	1352
325	-8.84	+24	385	-26.54	+259	445	-34.10	+662	505	-28.62	+1082	565	12.22	+1355
326	9.18	26	386	26.77	265	446	34.12	669	506	28.43	1088	566	11.89	1358
327	9.52	28	387	26.99	270	447	34.13	677	507	28.23	1094	567	11.55	1360
328	9.87	30	388	27.20	276	448	34.14	684	508	28.02	1100	568	11.21	1363
329	10.21	33	389	27.42	282	449	34.14	692	509	27.82	1106	569	10.88	1366
330	-10.55	+35	390	-27.63	+288	450	-34.15	+699	510	-27.61	+1112	570	10.54	+1368
331	10.89	37	391	27.84	294	451	34.14	706	511	27.40	1118	571	10.20	1370
332	11.23	40	392	28.04	300	452	34.14	714	512	27.18	1124	572	9.86	1372
333	11.56	42	393	28.25	306	453	34.13	721	513	26.96	1130	573	9.51	1374
334	11.90	44	394	28.45	312	454	34.12	729	514	26.74	1135	574	9.17	1376
335	-12.23	+47	395	-28.64	+318	455	-34.10	+736	515	-26.52	+1141	575	8.82	+1378
336	12.57	50	396	28.84	324	456	34.08	743	516	26.29	1147	576	8.48	1380
337	12.90	52	397	29.03	330	457	34.05	750	517	26.06	1152	577	8.13	1382
338	13.23	55	398	29.21	336	458	34.02	758	518	25.83	1158	578	7.78	1384
339	13.56	58	399	29.40	343	459	33.99	765	519	25.59	1164	579	7.44	1385
340	-13.89	+61	400	-29.58	+349	460	-33.96	+772	520	-25.36	+1169	580	7.09	+1387
341	14.21	64	401	29.75	355	461	33.92	779	521	25.12	1174	581	6.74	1388
342	14.54	67	402	29.93	362	462	33.88	787	522	24.87	1180	582	6.39	1390
343	14.86	70	403	30.10	368	463	33.83	794	523	24.63	1185	583	6.04	1391
344	15.18	73	404	30.26	374	464	33.78	802	524	24.38	1191	584	5.68	1392
345	-15.50	+76	405	-30.43	+381	465	-33.72	+809	525	-24.13	+1196	585	5.33	+1393
346	15.82	79	406	30.59	388	466	33.66	816	526	23.87	1201	586	4.98	1394
347	16.14	82	407	30.75	394	467	33.60	823	527	23.62	1206	587	4.62	1395
348	16.45	86	408	30.90	401	468	33.54	831	528	23.36	1211	588	4.27	1396
349	16.76	89	409	31.05	407	469	33.47	838	529	23.10	1216	589	3.92	1397
350	-17.07	+93	410	-31.20	+414	470	-33.40	+845	530	-22.83	+1221	590	3.56	+1398
351	17.38	97	411	31.34	421	471	33.32	852	531	22.56	1226	591	3.20	1399
352	17.69	100	412	31.48	428	472	33.24	859	532	22.29	1231	592	2.85	1400
353	17.99	104	413	31.62	434	473	33.15	867	533	22.02	1236	593	2.49	1400
354	18.30	108	414	31.75	441	474	33.07	874	534	21.74	1240	594	2.14	1401
355	-18.60	+112	415	-31.88	+448	475	-32.98	+881	535	-21.47	+1245	595	1.78	+1401
356	18.90	116	416	32.01	455	476	32.88	888	536	21.19	1250	596	1.42	1401
357	19.19	120	417	32.13	462	477	32.78	895	537	20.91	1254	597	1.07	1402
358	19.49	124	418	32.25	469	478	32.68	902	538	20.62	1258	598	0.71	1402
359	19.78	129	419	32.37	476	479	32.58	909	539	20.34	1263	599	0.35	1402
360	-20.07	+133	420	-32.48	+483	480	-32.47	+916	540	-20.05	+1267	600	0.00	+1402

($p. c. o$) is expressed in units of the seventh place of decimals.

TABLE VII, PART II.—Arg. III. *Action of Jupiter.*

Arg.	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(ρ. s. 1)	(ρ. c. 1)	Arg.	(v. s. 1)	(v. c. 1)	(v. s. 2)	(v. c. 2)	(ρ. s. 1)	(ρ. c. 1)
0	+	+	+	+	+	—	300	+	+	—	—	+	—
5	+	+	0	0	3	4	305	1.23	0.47	0.00	0.02	+	2
10	0	0	0	0	2	5	310	1.17	0.52	0.00	0.02	0	15
15	—	0	0	0	1	7	315	1.11	0.56	0.00	0.02	—	2
20	0	0	—	0	+	8	320	1.04	0.60	+	0	3	18
25	—	+	—	+	0	—	325	+	+	+	—	—	—
30	0	0	0	0	0	11	330	0.87	0.65	0.02	0.01	6	21
35	0	0	0	0	0	13	335	0.78	0.66	0.02	0.01	7	23
40	0	0	0	0	0	15	340	0.69	0.67	0.02	0.01	8	24
45	0	0	0	+	0	17	345	0.60	0.67	0.03	—	9	26
50	—	+	—	0	0	—	350	+	+	+	0	—	—
55	0	0	0	0	0	21	355	0.40	0.64	0.03	0.00	9	29
60	0	0	0	—	+	23	360	0.30	0.61	0.03	+	9	31
65	0	0	0	0	2	25	365	0.20	0.57	0.03	0.01	9	33
70	0	0	0	0	3	26	370	0.10	0.53	0.03	0.02	9	34
75	—	+	—	—	+	—	375	+	+	+	+	—	—
80	0	0	0	0	6	30	380	0.09	0.42	0.03	0.02	8	37
85	0	0	0	0	7	32	385	0.17	0.35	0.03	0.03	7	38
90	0	0	—	0	9	34	390	0.26	0.28	0.02	0.03	6	39
95	0	0	0	0	10	35	395	0.33	0.21	0.02	0.04	4	40
100	—	+	0	—	+	—	400	—	+	+	+	—	—
105	1	0	0	0	14	37	405	0.47	+	+	+	—	41
110	1	0	+	0	16	38	410	0.52	—	+	+	0	42
115	1	0	0	0	18	38	415	0.57	0.13	0.00	0.04	+	42
120	0	0	0	0	20	38	420	0.61	0.22	0.00	0.04	3	42
125	—	+	+	0	+	—	425	—	—	—	+	+	—
130	0	0	0	0	24	39	430	0.67	0.39	0.01	0.04	6	41
135	0	0	0	0	26	39	435	0.68	0.48	0.02	0.04	8	41
140	0	+	0	0	28	39	440	0.69	0.56	0.02	0.03	10	40
145	0	—	0	0	29	39	445	0.69	0.64	0.03	0.03	11	39
150	—	—	+	—	+	—	450	—	—	—	+	+	—
155	0	0	0	—	32	37	455	0.67	0.79	0.03	0.02	14	37
160	0	0	0	0	34	36	460	0.64	0.85	0.03	0.02	16	36
165	0	0	0	+	35	35	465	0.61	0.90	0.03	0.01	17	34
170	0	0	0	0	36	34	470	0.58	0.95	0.03	+	18	32
175	—	—	+	+	+	—	475	—	—	—	0	+	—
180	0	0	0	0	38	32	480	0.49	1.03	0.03	0.00	21	28
185	—	0	0	0	38	30	485	0.44	1.05	0.03	—	21	26
190	+	0	0	0	38	28	490	0.39	1.06	0.03	0.01	22	24
195	0	0	0	0	38	27	495	0.33	1.07	0.02	0.01	22	23
200	+	—	+	+	+	—	500	—	—	—	—	+	—
205	0	0	0	0	38	24	505	0.22	1.05	0.02	0.02	23	18
210	0	0	0	0	37	22	510	0.16	1.03	0.01	0.02	23	16
215	0	0	0	0	37	20	515	0.10	1.00	0.01	0.02	22	14
220	0	0	+	0	36	19	520	—	0	0	0	22	12
225	+	—	0	+	+	—	525	0.00	—	0	—	+	—
230	0	0	0	0	33	16	530	+	0	0	0	21	8
235	1	0	—	0	32	15	535	0.10	0.78	+	0	20	7
240	1	0	0	0	30	14	540	0.14	0.71	0.01	0.02	19	6
245	1	0	0	0	28	13	545	0.17	0.63	0.01	0.02	18	5
250	+	—	—	+	+	—	550	+	—	+	—	+	—
255	1	0	0	0	24	11	555	0.22	0.45	0.02	0.01	16	2
260	1	0	0	0	22	11	560	0.24	0.36	0.02	—	14	2
265	1	—	0	0	20	11	565	0.24	0.26	0.02	0.00	13	1
270	1	+	0	+	17	11	570	0.24	0.17	0.02	0.00	12	1
275	+	+	—	0	+	—	575	+	—	+	0	+	—
280	1	0	0	0	13	10	580	0.23	+	0	+	9	1
285	1	0	0	0	10	11	585	0.21	0.13	0.02	0.01	7	1
290	1	0	0	—	8	11	590	0.18	0.23	0.01	0.01	6	1
295	1	0	0	0	6	12	595	0.14	0.32	0.01	0.02	5	2
300	+	+	—	—	+	—	600	+	+	+	+	+	—

The quantities (ρ. s. 1) and (ρ. c. 1) are expressed in units of the seventh place of decimals.

TABLE VIII.—Arg. *g*. Equation of center and principal term of *log r*. Constant = — 0.000 1300.

Arg.	E	Log <i>r</i> ₀	Arg.	Arg.	E	Log <i>r</i> ₀	Arg.
° /	/ "		° /	° /	/ "		° /
0 0	0 0.00	1. 474 2912	360 0	8 30	8 45.87	1. 474 3330	351 30
10	10. 35	2912	50	40	8 56.10	3346	20
20	20. 70	2913	40	50	9 6.33	3363	10
0 30	0 31.05	1. 474 2914	359 30	9 0	9 16.55	1. 474 3380	351 0
40	41.40	2915	20	10	26.77	3398	50
50	0 51.75	2916	10	20	36.98	3416	40
1 0	1 2.10	1. 474 2918	359 0	9 30	9 47.19	1. 474 3434	350 30
10	12.45	2920	50	40	9 57.39	3452	20
20	22.80	2922	40	50	10 7.59	3471	10
1 30	1 33.14	1. 474 2925	358 30	10 0	10 17.78	1. 474 3490	350 0
40	43.49	2928	20	10	27.96	3509	50
50	1 53.84	2932	10	20	38.14	3529	40
2 0	2 4.18	1. 474 2935	358 0	10 30	10 48.32	1. 474 3549	349 30
10	14.52	2939	50	40	10 58.49	3569	20
20	24.86	2944	40	50	11 8.65	3590	10
2 30	2 35.20	1. 474 2948	357 30	11 0	11 18.81	1. 474 3611	349 0
40	45.54	2953	20	10	28.96	3632	50
50	2 55.88	2959	10	20	39.10	3654	40
3 0	3 6.22	1. 474 2964	357 0	11 30	11 49.24	1. 474 3676	348 30
10	16.55	2970	50	40	11 59.37	3698	20
20	26.89	2976	40	50	12 9.50	3720	10
3 30	3 37.22	1. 474 2983	356 30	12 0	12 19.62	1. 474 3743	348 0
40	47.55	2990	20	10	29.73	3766	50
50	3 57.88	2997	10	20	39.84	3789	40
4 0	4 8.20	1. 474 3005	356 0	12 30	12 49.94	1. 474 3813	347 30
10	18.52	3013	50	40	13 0.03	3837	20
20	28.84	3021	40	50	10.12	3862	10
4 30	4 39.16	1. 474 3029	355 30	13 0	13 20.20	1. 474 3886	347 0
40	49.48	3038	20	10	30.27	3911	50
50	4 59.79	3047	10	20	40.34	3937	40
5 0	5 10.10	1. 474 3057	355 0	13 30	13 50.40	1. 474 3962	346 30
10	20.41	3067	50	40	14 0.45	3988	20
20	30.72	3077	40	50	10.50	4015	10
5 30	5 41.02	1. 474 3087	354 30	14 0	14 20.53	1. 474 4041	346 0
40	5 51.32	3098	20	10	30.56	4068	50
50	6 1.62	3109	10	20	40.58	4095	40
6 0	6 11.91	1. 474 3120	354 0	14 30	14 50.60	1. 474 4123	345 30
10	22.20	3132	50	40	15 0.60	4151	20
20	32.49	3144	40	50	10.60	4179	10
6 30	6 42.77	1. 474 3157	353 30	15 0	15 20.59	1. 474 4207	345 0
40	6 53.05	3169	20	10	30.57	4236	50
50	7 3.33	3182	10	20	40.55	4265	40
7 0	7 13.60	1. 474 3196	353 0	15 30	15 50.52	1. 474 4294	344 30
10	23.87	3209	50	40	16 0.47	4324	20
20	34.14	3223	40	50	10.42	4354	10
7 30	7 44.40	1. 474 3237	352 30	16 0	16 20.36	1. 474 4384	344 0
40	7 54.66	3252	20	10	30.30	4415	50
50	8 4.91	3267	10	20	40.22	4446	40
8 0	8 15.16	1. 474 3282	352 0	16 30	16 50.14	1. 474 4477	343 30
10	25.40	3298	50	40	17 0.04	4509	20
20	35.64	3314	40	50	9.94	4541	10
8 30	8 45.87	1. 474 3330	351 30	17 0	17 19.83	1. 474 4573	343 0

When *g* exceeds 180° it is found to the right of the numbers, and E is negative.

TABLE VIII.—Arg. *g*. Equation of center and principal term of log *r*. Constant = — 0.000 1300.

Arg.	E		Log r.	Arg.	Arg.	E		Log r.	Arg.		
° /	' "	"		° /	° /	' "	"		° /		
17 0	17 19.83	9.88	I. 474 4573	32	843 0	25 30.23	9.31	I. 474 6612	47	334 30	
10	29.71	9.87	4605	33	50	39.54	9.29	6659	48	20	
20	39.58	9.86	4638	33	40	48.83	9.28	6707	48	10	
17 30	17 49.44	9.85	I. 474 4671	33	342 30	26 0	25 58.11	9.26	I. 474 6755	49	334 0
40	17 59.29	9.84	4704	34	20	10	26 7.37	9.25	6804	49	50
50	18 9.13	9.84	4738	34	10	20	16.62	9.24	6853	49	40
18 0	18 18.97	9.82	I. 474 4772	34	342 0	26 30	26 25.86	9.22	I. 474 6902	50	333 30
10	28.79	9.81	4806	35	50	40	35.08	9.21	6952	50	20
20	38.60	9.80	4841	35	40	50	44.29	9.20	7001	50	10
18 30	18 48.40	9.80	I. 474 4876	35	341 30	27 0	26 53.49	9.18	I. 474 7051	50	333 0
40	18 58.20	9.78	4911	36	20	10	27 2.67	9.17	7101	50	50
50	19 7.98	9.78	4947	35	10	20	11.84	9.15	7151	51	40
19 0	19 17.76	9.76	I. 474 4982	36	341 0	27 30	27 20.99	9.14	I. 474 7202	51	332 30
10	27.52	9.75	5018	37	50	40	30.13	9.12	7253	52	20
20	37.27	9.75	5055	37	40	50	39.25	9.11	7305	51	10
19 30	19 47.02	9.73	I. 474 5092	37	340 30	28 0	27 48.36	9.10	I. 474 7356	52	332 0
40	19 56.75	9.72	5129	37	20	10	27 57.46	9.08	7408	52	50
50	20 6.47	9.71	5166	38	10	20	28 6.54	9.06	7460	53	40
20 0	20 16.18	9.71	I. 474 5204	38	340 0	28 30	28 15.60	9.05	I. 474 7513	53	331 30
10	25.89	9.69	5242	38	50	40	24.65	9.04	7566	53	20
20	35.58	9.68	5280	38	40	50	33.69	9.02	7619	53	10
20 30	20 45.26	9.67	I. 474 5318	39	339 30	29 0	28 42.71	9.01	I. 474 7672	54	331 0
40	20 54.93	9.65	5357	39	20	10	28 51.72	8.99	7726	54	50
50	21 4.58	9.65	5396	39	10	20	29 0.71	8.98	7780	54	40
21 0	21 14.23	9.64	I. 474 5435	40	339 0	29 30	29 9.69	8.96	I. 474 7834	54	330 30
10	23.87	9.62	5475	40	50	40	18.65	8.94	7888	55	20
20	33.49	9.62	5515	40	40	50	27.59	8.93	7943	55	10
21 30	21 43.11	9.60	I. 474 5555	41	338 30	30 0	29 36.52	8.92	I. 474 7998	55	330 0
40	21 52.71	9.59	5596	41	20	10	45.44	8.90	8053	55	50
50	22 2.30	9.58	5637	41	10	20	29 54.34	8.88	8108	56	40
22 0	22 11.88	9.57	I. 474 5678	42	338 0	30 30	30 3.22	8.87	I. 474 8164	56	329 30
10	21.45	9.55	5720	42	50	40	12.09	8.85	8220	57	20
20	31.00	9.55	5762	42	40	50	20.94	8.84	8277	56	10
22 30	22 40.55	9.53	I. 474 5804	42	337 30	31 0	30 29.78	8.82	I. 474 8333	57	329 0
40	50.08	9.52	5846	43	20	10	38.60	8.80	8390	57	50
50	22 59.60	9.51	5889	43	10	20	47.40	8.79	8447	58	40
23 0	23 9.11	9.49	I. 474 5932	43	337 0	31 30	30 56.19	8.77	I. 474 8505	58	328 30
10	18.60	9.49	5975	44	50	40	31 4.96	8.76	8563	58	20
20	28.09	9.47	6019	44	40	50	13.72	8.74	8621	58	10
23 30	23 37.56	9.46	I. 474 6063	44	336 30	32 0	31 22.46	8.72	I. 474 8679	58	328 0
40	47.02	9.44	6107	44	20	10	31.18	8.71	8737	59	50
50	23 56.46	9.44	6151	45	10	20	39.89	8.69	8796	59	40
24 0	24 5.90	9.42	I. 474 6196	45	336 0	32 30	31 48.58	8.68	I. 474 8855	59	327 30
10	15.32	9.41	6241	45	50	40	31 57.26	8.65	8914	60	20
20	24.73	9.40	6286	46	40	50	32 5.91	8.64	8974	60	10
24 30	24 34.13	9.38	I. 474 6332	46	335 30	33 0	32 14.55	8.63	I. 474 9034	60	327 0
40	43.51	9.37	6378	46	20	10	23.18	8.61	9094	60	50
50	24 52.88	9.36	6424	46	10	20	31.79	8.59	9154	61	40
25 0	25 2.24	9.34	I. 474 6470	47	335 0	33 30	32 40.38	8.57	I. 474 9215	61	326 30
10	11.58	9.33	6517	47	50	40	48.95	8.55	9276	61	20
20	20.91	9.32	6564	48	40	50	32 57.50	8.54	9337	61	10
25 30	25 30.23		I. 474 6612		334 30	34 0	33 6.04		I. 474 9398		326 0

When *g* exceeds 180° it is found to the right of the numbers, and *E* is negative.

TABLE VIII.—Arg. *g*. Equation of center and principal term of *log r*. Constant = -0.000 1300

Arg.	E	Log <i>r</i> ₀	Arg.	Arg.	E	Log <i>r</i> ₀	Arg.
° /	/ "		° /	° /	/ "		° /
34 0	33 6.04 8.53	1.474 9398	326 0	42 30	39 57.06 "	1.475 2868	317 30
10	14.57 8.50	9460	50	40	40 4.61 7.55	2942	20
20	23.07 8.49	9522	40	50	12.14 7.53	3017	10
34 30	33 31.56 8.47	1.474 9584	325 30	43 0	40 19.64 7.49	1.475 3092	317 0
40	40.03 8.45	9647	20	10	27.13 7.46	3167	50
50	48.48 8.43	9710	10	20	34.59 7.45	3242	40
35 0	33 56.91 8.42	1.474 9773	325 0	43 30	40 42.04 7.42	1.475 3317	316 30
10	34 5.33 8.39	9836	50	40	49.46 7.40	3393	20
20	13.72 8.38	9899	40	50	40 56.86 7.38	3469	10
35 30	34 22.10 8.37	1.474 9963	324 30	44 0	41 4.24 7.36	1.475 3545	316 0
40	30.47 8.34	1.475 0027	20	10	11.60 7.33	3622	50
50	38.81 8.33	0092	10	20	18.93 7.32	3698	40
36 0	34 47.14 8.31	1.475 0156	324 0	44 30	41 26.25 7.29	1.475 3775	315 30
10	34 55.45 8.29	0221	50	40	33.54 7.28	3852	20
20	35 3.74 8.27	0286	40	50	40.82 7.25	3929	10
36 30	35 12.01 8.25	1.475 0351	323 30	45 0	41 48.07 7.23	1.475 4007	315 0
40	20.26 8.24	0417	20	10	41 55.30 7.20	4085	50
50	28.50 8.22	0483	10	20	42 2.50 7.19	4163	40
37 0	35 36.72 8.20	1.475 0549	323 0	45 30	42 9.69 7.16	1.475 4241	314 30
10	44.92 8.18	0615	50	40	16.85 7.14	4319	20
20	35 53.10 8.16	0682	40	50	23.99 7.12	4398	10
37 30	36 1.26 8.14	1.475 0749	322 30	46 0	42 31.11 7.10	1.475 4477	314 0
40	9.40 8.12	0816	20	10	38.21 7.08	4556	50
50	17.52 8.11	0883	10	20	45.29 7.05	4635	40
38 0	36 25.63 8.08	1.475 0951	322 0	46 30	42 52.34 7.03	1.475 4714	313 30
10	33.71 8.07	1019	50	40	42 59.37 7.01	4794	20
20	41.78 8.05	1087	40	50	43 6.38 6.99	4874	10
38 30	36 49.83 8.03	1.475 1155	321 30	47 0	43 13.37 6.96	1.475 4954	313 0
40	36 57.86 8.00	1224	20	10	20.33 6.94	5034	50
50	37 5.86 7.99	1293	10	20	27.27 6.92	5115	40
39 0	37 13.85 7.97	1.475 1362	321 0	47 30	43 34.19 6.90	1.475 5196	312 30
10	21.82 7.95	1431	50	40	41.09 6.87	5277	20
20	29.77 7.93	1501	40	50	47.96 6.85	5358	10
39 30	37 37.70 7.92	1.475 1571	320 30	48 0	43 54.81 6.83	1.475 5439	312 0
40	45.62 7.89	1641	20	10	44 1.64 6.80	5521	50
50	37 53.51 7.87	1711	10	20	8.44 6.79	5603	40
40 0	38 1.38 7.86	1.475 1781	320 0	48 30	44 15.23 6.76	1.475 5685	311 30
10	9.24 7.83	1852	50	40	21.99 6.73	5767	20
20	17.07 7.81	1923	40	50	28.72 6.72	5849	10
40 30	38 24.88 7.80	1.475 1994	319 30	49 0	44 35.44 6.69	1.475 5932	311 0
40	32.68 7.77	2066	20	10	42.13 6.66	6015	50
50	40.45 7.75	2138	10	20	48.79 6.65	6098	40
41 0	38 48.20 7.73	1.475 2210	319 0	49 30	44 55.44 6.62	1.475 6181	310 30
10	38 55.93 7.72	2282	50	40	45 2.06 6.60	6265	20
20	39 3.65 7.69	2354	40	50	8.66 6.57	6348	10
41 30	39 11.34 7.67	1.475 2427	318 30	50 0	45 15.23 6.55	1.475 6432	310 0
40	19.01 7.65	2500	20	10	21.78 6.53	6516	50
50	26.66 7.63	2573	10	20	28.31 6.50	6600	40
42 0	39 34.29 7.61	1.475 2646	318 0	50 30	45 34.81 6.48	1.475 6685	309 30
10	41.90 7.59	2720	50	40	41.29 6.46	6769	20
20	49.49 7.57	2794	40	50	47.75 6.43	6854	10
42 30	39 57.06	1.475 2868	317 30	51 0	45 54.18	1.475 6939	309 0

When *g* exceeds 180° it is found to the right of the numbers, and *E* is negative.

TABLE VIII.—Arg. *g*. Equation of center and principal term of log *r*. Constant = —0.000 1300.

Arg.	E	Log <i>r</i> ₀	Arg.	Arg.	E	Log <i>r</i> ₀	Arg.
° /	' "		° /	° /	' "		° /
51 0	45 54.18	1.475 6939	309 0	59 30	50 49.58	1.476 1518	300 30
10	46 0.59	7024	50	40	54.71	1613	20
20	6.97	7110	40	50	50 59.81	1707	10
51 30	46 13.33	1.475 7195	308 30	60 0	51 4.89	1.476 1801	300 0
40	19.67	7281	20	10	9.94	1896	50
50	25.98	7367	10	20	14.96	1991	40
52 0	46 32.27	1.475 7454	308 0	60 30	51 19.96	1.476 2086	299 30
10	38.53	7540	50	40	24.93	2181	20
20	44.77	7627	40	50	29.88	2276	10
52 30	46 50.99	1.475 7713	307 30	61 0	51 34.80	1.476 2371	299 0
40	46 57.18	7800	20	10	39.69	2467	50
50	47 3.35	7888	10	20	44.54	2563	40
53 0	47 9.50	1.475 7975	307 0	61 30	51 49.38	1.476 2658	298 30
10	15.62	8062	50	40	54.19	2754	20
20	21.71	8150	40	50	51 58.98	2850	10
53 30	47 27.78	1.475 8238	306 30	62 0	52 3.75	1.476 2947	298 0
40	33.82	8326	20	10	8.48	3043	50
50	39.85	8414	10	20	13.18	3140	40
54 0	47 45.84	1.475 8503	306 0	62 30	52 17.86	1.476 3236	297 30
10	51.81	8591	50	40	22.51	3333	20
20	47 57.76	8680	40	50	27.14	3430	10
54 30	48 3.68	1.475 8769	305 30	63 0	52 31.74	1.476 3527	297 0
40	9.58	8858	20	10	36.31	3624	50
50	15.45	8948	10	20	40.85	3722	40
55 0	48 21.30	1.475 9037	305 0	63 30	52 45.36	1.476 3819	296 30
10	27.12	9127	50	40	49.85	3917	20
20	32.92	9217	40	50	54.31	4015	10
55 30	48 38.69	1.475 9307	304 30	64 0	52 58.75	1.476 4113	296 0
40	44.44	9397	20	10	53 3.15	4211	50
50	50.16	9487	10	20	7.53	4309	40
56 0	48 55.86	1.475 9578	304 0	64 30	53 11.88	1.476 4407	295 30
10	49 1.53	9669	50	40	16.21	4506	20
20	7.18	9760	40	50	20.51	4604	10
56 30	49 12.80	1.475 9851	303 30	65 0	53 24.78	1.476 4703	295 0
40	18.39	1.475 9942	20	10	29.02	4802	50
50	23.96	1.476 0033	10	20	33.24	4901	40
57 0	49 29.50	1.476 0125	303 0	65 30	53 37.42	1.476 5000	294 30
10	35.02	0217	50	40	41.58	5099	20
20	40.52	0309	40	50	45.71	5198	10
57 30	49 45.99	1.476 0401	302 30	66 0	53 49.82	1.476 5298	294 0
40	51.43	0493	20	10	53.90	5397	50
50	49 56.84	0585	10	20	53 57.95	5497	40
58 0	50 2.23	1.476 0678	302 0	66 30	54 1.97	1.476 5597	293 30
10	7.60	0771	50	40	5.96	5697	20
20	12.93	0864	40	50	9.93	5797	10
58 30	50 18.24	1.476 0957	301 30	67 0	54 13.86	1.476 5897	293 0
40	23.53	1050	20	10	17.77	5997	50
50	28.79	1143	10	20	21.66	6097	40
59 0	50 34.03	1.476 1237	301 0	67 30	54 25.51	1.476 6198	292 30
10	39.24	1331	50	40	29.34	6299	20
20	44.42	1424	40	50	33.14	6399	10
59 30	50 49.58	1.476 1518	300 30	68 0	54 36.91	1.476 6500	292 00

 When *g* exceeds 180° it is found to the right of the numbers, and *E* is negative.

TABLE VIII.—Arg. *g*. Equation of center and principal term of log *r*. Constant = -0.000 1300.

Arg.	E	Log <i>r</i> ₀	Arg.	Arg.	E	Log <i>r</i> ₀	Arg.
° /	' "		° /	° /	' "		° /
68 0	54 36.91 "	1. 476 6500	292 0	76 30	57 11.41 "	1. 477 1772	283 30
10	40. 65 3.74	6601 101	50	40	13. 68 2.27	1877 105	20
20	44. 36 3.71	6702 101	40	50	15. 93 2.25	1983 106	10
68 30	54 48.05 3.66	1. 476 6803	291 30	77 0	57 18. 15 2.19	1. 477 2088	283 0
40	51. 71 3.63	6905 101	20	10	20. 34 2.16	2194 106	50
50	55. 34 3.60	7006 102	10	20	22. 50 2.13	2300 106	40
69 0	54 58.94 3.57	1. 476 7108	291 0	77 30	57 24.63 2.10	1. 477 2406	282 30
10	55 2. 51 3.54	7209 102	50	40	26. 73 2.08	2511 105	20
20	6. 05 3.52	7311 102	40	50	28. 81 2.04	2617 106	10
69 30	55 9. 57 3.49	1. 476 7413	290 30	78 0	57 30.85 2.01	1. 477 2723	282 0
40	13. 06 3.46	7515 102	20	10	32. 86 1.99	2829 106	50
50	16. 52 3.43	7617 102	10	20	34. 85 1.95	2935 106	40
70 0	55 19.95 3.41	1. 476 7719	290 0	78 30	57 36.80 1.93	1. 477 3041	281 30
10	23. 36 3.37	7821 102	50	40	38. 73 1.89	3148 107	20
20	26. 73 3.35	7923 103	40	50	40. 62 1.87	3254 106	10
70 30	55 30.08 3.32	1. 476 8026	289 30	79 0	57 42.49 1.84	1. 477 3360	281 0
40	33. 40 3.29	8128 103	20	10	44. 33 1.81	3467 107	50
50	36. 69 3.26	8231 103	10	20	46. 14 1.77	3573 106	40
71 0	55 39.95 3.23	1. 476 8334	289 0	79 30	57 47.91 1.75	1. 477 3680	280 30
10	43. 18 3.20	8436 103	50	40	49. 66 1.72	3786 106	20
20	46. 38 3.18	8539 103	40	50	51. 38 1.69	3893 107	10
71 30	55 49.56 3.14	1. 476 8642	288 30	80 0	57 53.07 1.66	1. 477 3999	280 0
40	52. 70 3.12	8745 104	20	10	54. 73 1.63	4106 107	50
50	55. 82 3.09	8849 103	10	20	56. 36 1.60	4212 106	40
72 0	55 58.91 3.06	1. 476 8952	288 0	80 30	57 57.96 1.57	1. 477 4319	279 30
10	56 1. 97 3.03	9055 104	50	40	57 59.53 1.55	4426 107	20
20	5. 00 3.01	9159 103	40	50	58 1. 08 1.51	4533 107	10
72 30	56 8.01 2.97	1. 476 9262	287 30	81 0	58 2. 59 1.48	1. 477 4640	279 0
40	10. 98 2.95	9366 104	20	10	4. 07 1.45	4747 107	50
50	13. 93 2.91	9470 104	10	20	5. 52 1.43	4854 107	40
73 0	56 16.84 2.89	1. 476 9574	287 0	81 30	58 6. 95 1.39	1. 477 4961	278 30
10	19. 73 2.86	9678 104	50	40	8. 34 1.37	5068 107	20
20	22. 59 2.83	9781 103	40	50	9. 71 1.33	5175 107	10
73 30	56 25.42 2.80	1. 476 9885	286 30	82 0	58 11.04 1.30	1. 477 5282	278 0
40	28. 22 2.78	1. 476 9990	20	10	12. 34 1.28	5389 107	50
50	31. 00 2.74	1. 477 0094	10	20	13. 62 1.25	5496 107	40
74 0	56 33.74 2.71	1. 477 0198	286 0	82 30	58 14.87 1.21	1. 477 5603	277 30
10	36. 45 2.69	0302 104	50	40	16. 08 1.19	5710 107	20
20	39. 14 2.66	0407 104	40	50	17. 27 1.16	5818 108	10
74 30	56 41.80 2.62	1. 477 0511	285 30	83 0	58 18.43 1.12	1. 477 5925	277 0
40	44. 42 2.60	0616 105	20	10	19. 55 1.10	6032 107	50
50	47. 02 2.57	0721 105	10	20	20. 65 1.07	6140 108	40
75 0	56 49.59 2.54	1. 477 0826	285 0	83 30	58 21.72 1.03	1. 477 6247	276 30
10	52. 13 2.51	0930 104	50	40	22. 75 1.01	6354 107	20
20	54. 64 2.48	1035 105	40	50	23. 76 0.98	6462 108	10
75 30	56 57.12 2.46	1. 477 1140	284 30	84 0	58 24.74 0.95	1. 477 6569	276 0
40	56 59.58 2.42	1245 105	20	10	25. 69 0.91	6677 107	50
50	57 2. 00 2.40	1350 106	10	20	26. 60 0.89	6784 108	40
76 0	57 4. 40 2.36	1. 477 1456	284 0	84 30	58 27.49 0.86	1. 477 6892	275 30
10	6. 76 2.34	1561 105	50	40	28. 35 0.83	6999 107	20
20	9. 10 2.31	1666 105	40	50	29. 18 0.80	7107 108	10
76 30	57 11.41	1. 477 1772	283 30	85 0	58 29.98	1. 477 7215	275 0

When *g* exceeds 180° it is found to the right of the numbers, and E is negative.

TABLE VIII.—Arg g . Equation of center and principal term of $\log r$. Constant = -0.0001300 .

Arg.	E	Log r_0	Arg.	Arg.	E	Log r_0	Arg.
° /	' "		° /	° /	' "		° /
85 0	58 29.98 "	1.477 7215	275 0	98 30	58 31.26 "	1.478 2708	266 30
10	30.75 0.77	7322	50	40	30.51 0.75	2815	20
20	31.49 0.74	7430	40	50	29.74 0.77	2923	10
85 30	58 32.20 0.68	1.477 7538	274 30	94 0	58 28.93 0.84	1.478 3030	266 0
40	32.88 0.65	7645	20	10	28.09 0.87	3137	50
50	33.53 0.62	7753	10	20	27.22 0.89	3245	40
86 0	58 34.15 0.59	1.477 7861	274 0	94 30	58 26.33 0.93	1.478 3352	265 30
10	34.74 0.57	7968	50	40	25.40 0.95	3459	20
20	35.31 0.53	8076	40	50	24.45 0.99	3566	10
86 30	58 35.84 0.50	1.477 8184	273 30	95 0	58 23.46 1.01	1.478 3673	265 0
40	36.34 0.47	8292	20	10	22.45 1.05	3780	50
50	36.81 0.44	8399	10	20	21.40 1.07	3888	40
87 0	58 37.25 0.42	1.477 8507	273 0	95 30	58 20.33 1.10	1.478 3995	264 30
10	37.67 0.38	8615	50	40	19.23 1.13	4102	20
20	38.05 0.35	8723	40	50	18.10 1.17	4209	10
87 30	58 38.40 0.33	1.477 8830	272 30	96 0	58 16.93 1.19	1.478 4315	264 0
40	38.73 0.29	8938	20	10	15.74 1.22	4422	50
50	39.02 0.26	9046	10	20	14.52 1.25	4529	40
88 0	58 39.28 0.23	1.477 9154	272 0	96 30	58 13.27 1.28	1.478 4636	263 30
10	39.51 0.21	9262	50	40	11.99 1.31	4743	20
20	39.72 0.17	9370	40	50	10.68 1.34	4850	10
88 30	58 39.89 0.14	1.477 9477	271 30	97 0	58 9.34 1.37	1.478 4956	263 0
40	40.03 0.12	9585	20	10	7.97 1.39	5063	50
50	40.15 0.08	9693	10	20	6.58 1.43	5169	40
89 0	58 40.23 0.06	1.477 9801	271 0	97 30	58 5.15 1.46	1.478 5276	262 30
10	40.29 0.02	1.477 9909	50	40	3.69 1.48	5382	20
20	40.31 0.00	1.478 0016	40	50	2.21 1.52	5489	10
89 30	58 40.31 0.04	1.478 0124	270 30	98 0	58 0.69 1.54	1.478 5595	262 0
40	40.27 0.06	0232	20	10	57 59.15 1.58	5702	50
50	40.21 0.10	0340	10	20	57.57 1.60	5808	40
90 0	58 40.11 0.12	1.478 0448	270 0	98 30	57 55.97 1.63	1.478 5914	261 30
10	39.99 0.15	0555	50	40	54.34 1.66	6020	20
20	39.84 0.19	0663	40	50	52.68 1.69	6126	10
90 30	58 39.65 0.21	1.478 0771	269 30	99 0	57 50.99 1.72	1.478 6232	261 0
40	39.44 0.24	0879	20	10	49.27 1.75	6338	50
50	39.20 0.28	0986	10	20	47.52 1.78	6444	40
91 0	58 38.92 0.30	1.478 1094	269 0	99 30	57 45.74 1.81	1.478 6550	260 30
10	38.62 0.33	1202	50	40	43.93 1.83	6656	20
20	38.29 0.36	1309	40	50	42.10 1.87	6762	10
91 30	58 37.93 0.40	1.478 1417	268 30	100 0	57 40.23 1.90	1.478 6868	260 0
40	37.53 0.42	1525	20	10	38.33 1.92	6973	50
50	37.11 0.45	1632	10	20	36.41 1.95	7079	40
92 0	58 36.66 0.48	1.478 1740	268 0	100 30	57 34.46 1.98	1.478 7184	259 30
10	36.18 0.51	1848	50	40	32.48 2.01	7290	20
20	35.67 0.54	1956	40	50	30.47 2.04	7395	10
92 30	58 35.13 0.57	1.478 2063	267 30	101 0	57 28.43 2.07	1.478 7500	259 0
40	34.56 0.60	2170	20	10	26.36 2.10	7606	50
50	33.96 0.63	2278	10	20	24.26 2.13	7711	40
93 0	58 33.33 0.66	1.478 2386	267 0	101 30	57 22.13 2.16	1.478 7816	258 30
10	32.67 0.69	2493	50	40	19.57 2.18	7921	20
20	31.98 0.72	2600	40	50	17.79 2.21	8026	10
93 30	58 31.26	1.478 2708	266 30	102 0	57 15.58	1.478 8131	258 0

 When g exceeds 180° it is found to the right of the numbers, and E is negative.

TABLE VIII.—Arg. *g*. Equation of center and principal term of log *r*. Constant = — 0.000 1300.

Arg.	E	Log <i>r</i> ₀	Arg.	Arg.	E	Log <i>r</i> ₀	Arg.
° /	/ "		° /	° /	/ "		° /
102 0	57 15.58 "	1. 478 8131	258 0	110 30	54 44.94 "	1. 479 3366	249 30
10	13.34 2.24	8236 105	50	40	41.26 3.68	3466 100	20
20	11.06 2.28	8341 104	40	50	37.55 3.71	3566 100	10
102 30	57 8.76 2.33	1. 478 8445	257 30	111 0	54 33.81 3.76	1. 479 3666	249 0
40	6.43 2.35	8550 104	20	10	30.05 3.79	3765 100	50
50	4.08 2.39	8654 105	10	20	26.26 3.82	3865 99	40
103 0	57 1.69 2.41	1. 478 8759	257 0	111 30	54 22.44 3.84	1. 479 3964	248 30
10	56 59.28 2.45	8863 105	50	40	18.60 3.88	4064 99	20
20	56.83 2.47	8968 104	40	50	14.72 3.90	4163 99	10
103 30	56 54.36 2.50	1. 478 9072	256 30	112 0	54 10.82 3.92	1. 479 4262	248 0
40	51.86 2.53	9176 104	20	10	6.90 3.96	4361 99	50
50	49.33 2.56	9280 104	10	20	54 2.94 3.98	4460 98	40
104 0	56 46.77 2.59	1. 478 9384	256 0	112 30	53 58.96 4.01	1. 479 4558	247 30
10	44.18 2.61	9488 104	50	40	54.95 4.03	4657 99	20
20	41.57 2.65	9592 104	40	50	50.92 4.07	4755 98	10
104 30	56 38.92 2.67	1. 478 9695	255 30	113 0	53 46.85 4.09	1. 479 4854	247 0
40	36.25 2.70	9799 104	20	10	42.76 4.11	4952 98	50
50	33.55 2.73	1. 478 9903	10	20	38.65 4.14	5050 98	40
105 0	56 30.82 2.76	1. 479 0006	255 0	113 30	53 34.51 4.17	1. 479 5148	246 30
10	28.06 2.79	0110 104	50	40	30.34 4.20	5245 97	20
20	25.27 2.81	0213 103	40	50	26.14 4.22	5343 98	10
105 30	56 22.46 2.84	1. 479 0316	254 30	114 0	53 21.92 4.25	1. 479 5441	246 0
40	19.62 2.88	0419 103	20	10	17.67 4.28	5538 97	50
50	16.74 2.90	0522 103	10	20	13.39 4.30	5635 97	40
106 0	56 13.84 2.93	1. 479 0625	254 0	114 30	53 9.09 4.33	1. 479 5732	245 30
10	10.91 2.95	0728 102	50	40	4.76 4.36	5829 97	20
20	7.96 2.99	0830 103	40	50	53 0.40 4.39	5926 97	10
106 30	56 4.97 3.01	1. 479 0933	253 30	115 0	52 56.01 4.41	1. 479 6023	245 0
40	56 1.96 3.04	1036 102	20	10	51.60 4.43	6120 96	50
50	55 58.92 3.07	1138 103	10	20	47.17 4.46	6216 96	40
107 0	55 55.85 3.10	1. 479 1241	253 0	115 30	52 42.71 4.49	1. 479 6312	244 30
10	52.75 3.12	1343 102	50	40	38.22 4.52	6408 96	20
20	49.63 3.16	1445 102	40	50	33.70 4.54	6504 96	10
107 30	55 46.47 3.18	1. 479 1547	252 30	116 0	52 29.16 4.57	1. 479 6600	244 0
40	43.29 3.21	1649 102	20	10	24.59 4.59	6696 96	50
50	40.08 3.24	1751 102	10	20	20.00 4.62	6791 95	40
108 0	55 36.84 3.26	1. 479 1853	252 0	116 30	52 15.38 4.65	1. 479 6887	243 30
10	33.58 3.30	1954 101	50	40	10.73 4.67	6982 95	20
20	30.28 3.32	2056 102	40	50	6.06 4.70	7077 95	10
108 30	55 26.96 3.35	1. 479 2157	251 30	117 0	52 1.36 4.73	1. 479 7172	243 0
40	23.61 3.37	2259 101	20	10	51 56.63 4.75	7267 95	50
50	20.24 3.41	2360 101	10	20	51.88 4.78	7362 95	40
109 0	55 16.83 3.43	1. 479 2461	251 0	117 30	51 47.10 4.80	1. 479 7457	242 30
10	13.40 3.46	2562 101	50	40	42.30 4.83	7551 94	20
20	9.94 3.49	2663 101	40	50	37.47 4.85	7645 94	10
109 30	55 6.45 3.52	1. 479 2764	250 30	118 0	51 32.62 4.88	1. 479 7739	242 0
40	55 2.93 3.54	2864 101	20	10	27.74 4.91	7833 94	50
50	54 59.39 3.57	2965 100	10	20	22.83 4.93	7927 94	40
110 0	54 55.82 3.60	1. 479 3065	250 0	118 30	51 17.90 4.96	1. 479 8021	241 30
10	52.22 3.63	3166 100	50	40	12.94 4.98	8114 93	20
20	48.59 3.65	3266 100	40	50	7.96 5.01	8208 93	10
110 30	54 44.94	1. 479 3366	249 30	119 0	51 2.95	1. 479 8301	241 0

When *g* exceeds 180° it is found to the right of the numbers, and E is negative.

TABLE VIII.—Arg. *g*. Equation of center and principal term of *log r*. Constant = -0.000 1300.

Arg.	E	Log <i>r</i> ₀	Arg.	Arg.	E	Log <i>r</i> ₀	Arg.
° /	' "		° /	° /	' "		° /
119 0	51 2.95	1.479 8301	241 0	127 30	46 14.72	1.480 2830	232 30
10	50 57.92	8394	50	40	8.45	2914	20
20	52.86	8487	40	50	46 2.16	2998	10
119 30	50 47.78	1.479 8580	240 30	128 0	45 55.84	1.480 3082	232 0
40	42.67	8672	20	10	49.50	3166	50
50	37.53	8765	10	20	43.13	3249	40
120 0	50 32.37	1.479 8857	240 0	128 30	45 36.74	1.480 3332	231 30
10	27.18	8949	50	40	30.33	3415	20
20	21.97	9041	40	50	23.90	3498	10
120 30	50 16.74	1.479 9132	239 30	129 0	45 17.45	1.480 3580	231 0
40	11.48	9224	20	10	10.97	3663	50
50	6.19	9315	10	20	45 4.47	3745	40
121 0	50 0.88	1.479 9407	239 0	129 30	44 57.95	1.480 3827	230 30
10	49 55.54	9498	50	40	51.41	3908	20
20	50.18	9589	40	50	44.84	3990	10
121 30	49 44.79	1.479 9680	238 30	130 0	44 38.25	1.480 4071	230 0
40	39.38	9770	20	10	31.64	4152	50
50	33.94	9860	10	20	25.01	4233	40
122 0	49 28.48	1.479 9951	238 0	130 30	44 18.35	1.480 4314	229 30
10	23.00	1.480 0041	50	40	11.67	4394	20
20	17.49	0131	40	50	44 4.97	4475	10
122 30	49 11.95	1.480 0221	237 30	131 0	43 58.25	1.480 4555	229 0
40	6.39	0310	20	10	51.51	4635	50
50	49 0.81	0400	10	20	44 75	4714	40
123 0	48 55.20	1.480 0489	237 0	131 30	43 37.96	1.480 4794	228 30
10	49.57	0578	50	40	31.15	4873	20
20	43.91	0667	40	50	24.32	4952	10
123 30	48 38.23	1.480 0755	236 30	132 0	43 17.47	1.480 5031	228 0
40	32.53	0844	20	10	10.60	5110	50
50	26.80	0932	10	20	43 3.70	5188	40
124 0	48 21.04	1.480 1020	236 0	132 30	42 56.79	1.480 5266	227 30
10	15.27	1108	50	40	49.85	5344	20
20	9.46	1196	40	50	42.89	5422	10
124 30	48 3.64	1.480 1284	235 30	133 0	42 35.91	1.480 5500	227 0
40	47 57.79	1372	20	10	28.91	5577	50
50	51.92	1459	10	20	21.89	5654	40
125 0	47 46.02	1.480 1546	235 0	133 30	42 14.84	1.480 5731	226 30
10	40.10	1633	50	40	7.78	5808	20
20	34.15	1720	40	50	42 0.70	5884	10
125 30	47 28.18	1.480 1806	234 30	134 0	41 53.59	1.480 5961	226 0
40	22.19	1892	20	10	46.46	6037	50
50	16.17	1978	10	20	39.31	6113	40
126 0	47 10.13	1.480 2064	234 0	134 30	41 32.15	1.480 6188	225 30
10	47 4.07	2150	50	40	24.96	6264	20
20	46 57.98	2236	40	50	17.75	6339	10
126 30	46 51.87	1.480 2322	233 30	135 0	41 10.52	1.480 6414	225 0
40	45.74	2407	20	10	41 3.27	6489	50
50	39.58	2492	10	20	40 56.00	6563	40
127 0	46 33.40	1.480 2577	233 0	135 30	40 48.71	1.480 6637	224 30
10	27.20	2661	50	40	41.40	6711	20
20	20.97	2746	40	50	34.07	6785	10
127 30	46 14.72	1.480 2830	232 30	136 0	40 26.71	1.480 6859	224 0

When *g* exceeds 180° it is found to the right of the numbers, and E is negative.

TABLE VIII.—Arg. *g*. Equation of center and principal term of $\log r$. Constant = — 0.000 1300.

Arg.	E	Log r_0	Arg.	Arg.	E	Log r_0	Arg.
° /	/ "		° /	° /	/ "		° /
136 0	40 26.71	1.480 6859	224 0	144 30	33 46.60	1.481 0303	215 30
10	19.34	6932	50	40	38.29	0364	20
20	11.95	7005	40	50	29.97	0425	10
136 30	40 4.54	1.480 7078	223 30	145 0	33 21.63	1.481 0486	215 0
40	39 57.11	7151	20	10	13.27	0546	50
50	49.66	7224	10	20	33 4.89	0606	40
137 0	39 42.19	1.480 7296	223 0	145 30	32 56.50	1.481 0666	214 30
10	34.70	7368	50	40	48.09	0726	20
20	27.19	7440	40	50	39.67	0785	10
137 30	39 19.66	1.480 7511	222 30	146 0	32 31.23	1.481 0844	214 0
40	12.11	7583	20	10	22.77	0903	50
50	39 4.54	7654	10	20	14.30	0962	40
138 0	38 56.95	1.480 7725	222 0	146 30	32 5.81	1.481 1020	213 30
10	49.34	7796	50	40	31 57.31	1078	20
20	41.72	7866	40	50	48.79	1136	10
138 30	38 34.07	1.480 7936	221 30	147 0	31 40.25	1.481 1194	213 0
40	26.41	8006	20	10	31.70	1251	50
50	18.72	8076	10	20	23.13	1308	40
139 0	38 11.02	1.480 8145	221 0	147 30	31 14.55	1.481 1365	212 30
10	38 3.30	8214	50	40	31 5.95	1422	20
20	37 55.56	8283	40	50	30 57.34	1478	10
139 30	37 47.80	1.480 8352	220 30	148 0	30 48.71	1.481 1534	212 0
40	40.02	8421	20	10	40.07	1590	50
50	32.22	8489	10	20	31.41	1645	40
140 0	37 24.41	1.480 8557	220 0	148 30	30 22.74	1.481 1700	211 30
10	16.57	8625	50	40	14.05	1755	20
20	8.72	8693	40	50	30 5.35	1810	10
140 30	37 0.85	1.480 8760	219 30	149 0	29 56.63	1.481 1865	211 0
40	36 52.96	8827	20	10	47.89	1919	50
50	45.05	8894	10	20	39.14	1973	40
141 0	36 37.13	1.480 8961	219 0	149 30	29 30.38	1.481 2027	210 30
10	29.18	9027	50	40	21.60	2080	20
20	21.22	9093	40	50	12.81	2133	10
141 30	36 13.24	1.480 9159	218 30	150 0	29 4.01	1.481 2186	210 0
40	36 5.24	9225	20	10	28 55.19	2239	50
50	35 57.23	9290	10	20	46.35	2291	40
142 0	35 49.20	1.480 9355	218 0	150 30	28 37.50	1.481 2343	209 30
10	41.14	9420	50	40	28.64	2395	20
20	33.07	9485	40	50	19.76	2446	10
142 30	35 24.99	1.480 9549	217 30	151 0	28 10.87	1.481 2497	209 0
40	16.88	9613	20	10	28 1.97	2548	50
50	8.76	9677	10	20	27 53.05	2599	40
143 0	35 0.62	1.480 9741	217 0	151 30	27 44.11	1.481 2650	208 30
10	34 52.47	9805	50	40	35.17	2700	20
20	44.30	9868	40	50	26.21	2750	10
143 30	34 36.11	1.480 9931	216 30	152 0	27 17.23	1.481 2799	208 0
40	27.90	1.480 9993	20	10	27 8.25	2849	50
50	19.67	1.481 0056	10	20	26 59.25	2898	40
144 0	34 11.43	1.481 0118	216 0	152 30	26 50.23	1.481 2947	207 30
10	34 3.17	0180	50	40	41.20	2995	20
20	33 54.89	0242	40	50	32.16	3043	10
144 30	33 46.60	1.481 0303	215 30	153 0	26 23.11	1.481 3091	207 0

When g exceeds 180° it is found to the right of the numbers, and E is negative.

TABLE VIII.—Arg. *g*. Equation of center and principal term of log *r*. Constant = — 0.000 1300.

Arg.	E	Log <i>r</i> ₀	Arg.	Arg.	E	Log <i>r</i> ₀	Arg.	
° /	° "		° /	° /	° "		° /	
153 0	26 23.11	9.07	1.481 3091	207 0	161 30	18 25.81	1.481 5166	198 30
10	14.04	9.08	3139	50	40	16.18	5199	20
20	26 4.96	9.09	3186	40	50	18 6.54	5232	10
153 30	25 55.87	9.10	1.481 3233	206 30	162 0	17 56.90	1.481 5265	198 0
40	46.77	9.12	3280	20	10	47.24	5297	50
50	37.65	9.13	3327	10	20	37.58	5329	40
154 0	25 28.52	9.14	1.481 3373	206 0	162 30	17 27.90	1.481 5361	197 30
10	19.38	9.16	3419	50	40	18.22	5393	20
20	10.22	9.17	3465	40	50	17 8.53	5424	10
154 30	25 1.05	9.18	1.481 3511	205 30	163 0	16 58.83	1.481 5455	197 0
40	24 51.87	9.19	3556	20	10	49.12	5485	50
50	42.68	9.20	3601	10	20	39.41	5515	40
155 0	24 33.48	9.22	1.481 3645	205 0	163 30	16 29.69	1.481 5545	196 30
10	24.26	9.23	3690	50	40	19.96	5575	20
20	15.03	9.24	3734	40	50	10.22	5605	10
155 30	24 5.79	9.25	1.481 3778	204 30	164 0	16 0.47	1.481 5634	196 0
40	23 56.54	9.27	3821	20	10	15 50.71	5663	50
50	47.27	9.27	3864	10	20	40.95	5692	40
156 0	23 38.00	9.29	1.481 3907	204 0	164 30	15 31.18	1.481 5720	195 30
10	28.71	9.30	3950	50	40	21.40	5748	20
20	19.41	9.31	3993	40	50	11.61	5775	10
156 30	23 10.10	9.32	1.481 4035	203 30	165 0	15 1.82	1.481 5803	195 0
40	23 0.78	9.34	4077	20	10	14 52.02	5830	50
50	22 51.44	9.34	4118	10	20	42.21	5857	40
157 0	22 42.10	9.36	1.481 4159	203 0	165 30	14 32.39	1.481 5883	194 30
10	32.74	9.37	4200	50	40	22.57	5909	20
20	23.37	9.37	4241	40	50	12.74	5935	10
157 30	22 14.00	9.39	1.481 4282	202 30	166 0	14 2.90	1.481 5961	194 0
40	22 4.61	9.40	4322	20	10	13 53.06	5986	50
50	21 55.21	9.41	4362	10	20	43.21	6011	40
158 0	21 45.80	9.43	1.481 4401	202 0	166 30	13 33.35	1.481 6036	193 30
10	36.37	9.43	4440	50	40	23.49	6060	20
20	26.94	9.44	4479	40	50	13.62	6084	10
158 30	21 17.50	9.45	1.481 4518	201 30	167 0	13 3.74	1.481 6108	193 0
40	21 8.05	9.47	4557	20	10	12 53.86	6132	50
50	20 58.58	9.47	4595	10	20	43.97	6155	40
159 0	20 49.11	9.49	1.481 4633	201 0	167 30	12 34.07	1.481 6178	192 30
10	39.62	9.49	4670	50	40	24.17	6200	20
20	30.13	9.51	4708	40	50	14.26	6222	10
159 30	20 20.62	9.51	1.481 4745	200 30	168 0	12 4.35	1.481 6244	192 0
40	11.11	9.53	4781	20	10	11 54.43	6266	50
50	20 1.58	9.53	4818	10	20	44.50	6288	40
160 0	19 52.05	9.55	1.481 4854	200 0	168 30	11 34.57	1.481 6309	191 30
10	42.50	9.55	4890	50	40	24.63	6329	20
20	32.95	9.56	4925	40	50	14.69	6350	10
160 30	19 23.39	9.57	1.481 4960	199 30	169 0	11 4.74	1.481 6370	191 0
40	13.82	9.59	4995	20	10	10 54.78	6390	50
50	19 4.23	9.59	5030	10	20	44.82	6410	40
161 0	18 54.64	9.60	1.481 5065	199 0	169 30	10 34.86	1.481 6429	190 30
10	45.04	9.61	5099	50	40	24.89	6448	20
20	35.43	9.62	5132	40	50	14.91	6467	10
161 30	18 25.81		1.481 5166	198 30	170 0	10 4.93	1.481 6485	190 0

 When *g* exceeds 180° it is found to the right of the numbers, and *E* is negative.

TABLE VIII.—Arg. *g*. Equation of center and principal term of $\log r$. Constant = -0.0001300 .

Arg.	E	Log r_0	Arg.	Arg.	E	Log r_0	Arg.
° /	' "		° /	° /	' "		° /
170 0	10 4.93 9.98	1.481 6485 18	180 0	175 0	5 3.59 10.10	1.481 6896 9	185 0
10	9 54.95 9.99	6503 18	50	10	4 53.49 10.10	6905 9	50
20	44.96 10.00	6521 18	40	20	43.39 10.10	6914 9	40
170 30	9 34.96 10.00	1.481 6539 17	180 30	175 30	4 33.29 10.10	1.481 6923 8	184 30
40	24.96 10.00	6556 17	20	40	23.19 10.11	6931 8	20
50	14.96 10.01	6573 16	10	50	13.08 10.10	6939 7	10
171 0	9 4.95 10.01	1.481 6589 16	189 0	176 0	4 2.98 10.11	1.481 6946 7	184 0
10	8 54.94 10.02	6605 16	50	10	3 52.87 10.11	6953 7	50
20	44.92 10.02	6621 16	40	20	42.76 10.12	6960 7	40
171 30	8 34.90 10.03	1.481 6637 16	188 30	176 30	3 32.64 10.11	1.481 6967 6	183 30
40	24.87 10.03	6653 15	20	40	22.53 10.12	6973 6	20
50	14.84 10.03	6668 15	10	50	12.41 10.11	6979 6	10
172 0	8 4.81 10.04	1.481 6683 14	188 0	177 0	3 2.30 10.12	1.481 6985 5	183 0
10	7 54.77 10.04	6697 14	50	10	2 52.18 10.12	6990 5	50
20	44.73 10.05	6711 14	40	20	42.06 10.13	6995 5	40
172 30	7 34.68 10.05	1.481 6725 14	187 30	177 30	2 31.93 10.12	1.481 7000 4	182 30
40	24.63 10.05	6739 13	20	40	21.81 10.12	7004 4	20
50	14.58 10.06	6752 13	10	50	11.69 10.13	7008 4	10
173 0	7 4.52 10.06	1.481 6765 13	187 0	178 0	2 1.56 10.13	1.481 7012 4	182 0
10	6 54.46 10.06	6778 12	50	10	1 51.43 10.13	7016 3	50
20	44.40 10.07	6790 12	40	20	41.30 10.12	7019 3	40
173 30	6 34.33 10.07	1.481 6802 12	186 30	78 30	1 31.18 10.13	1.481 7022 3	181 30
40	24.26 10.08	6814 11	20	40	21.05 10.13	7025 2	20
50	14.18 10.08	6825 11	10	50	10.92 10.13	7027 2	10
174 0	6 4.10 10.08	1.481 6836 11	186 0	179 0	1 0.79 10.13	1.481 7029 2	181 0
10	5 54.02 10.08	6847 11	50	10	0 50.66 10.13	7031 1	50
20	43.94 10.08	6858 10	40	20	40.53 10.13	7032 1	40
174 30	5 33.86 10.09	1.481 6868 10	185 30	179 30	0 30.40 10.14	1.481 7033 1	180 30
40	23.77 10.09	6878 9	20	40	20.26 10.13	7034 0	20
50	13.68 10.09	6887 9	10	50	10.13 10.13	7034 0	10
175 0	5 3.59	1.481 6896	185 0	180 0	0 0.00	1.481 7034	180 0

When g exceeds 180° it is found to the right of the numbers, and E is negative.

TABLE IX.—Arg. *u*. Reduction to the ecliptic for 1900 and its secular variation.

Arg.	R	Sec. Var.	Arg.	R	Sec. Var.	Arg.	R	Sec. Var.
0	0.00	0.00	60	-43.08	+0.44	120	+43.08	-0.44
1	-1.74	+0.02	61	42.18	+0.43	121	43.92	+0.84
2	3.47	0.04	62	41.24	0.94	122	44.71	0.79
3	5.20	0.05	63	40.24	1.00	123	45.44	0.73
4	6.92	0.07	64	39.20	1.04	124	46.12	0.68
					1.09			0.62
5	-8.64	+0.09	65	-38.11	+0.39	125	+46.74	+0.57
6	10.34	0.11	66	36.97	+0.38	126	47.31	0.50
7	12.03	0.12	67	35.78	1.19	127	47.81	0.45
8	13.71	0.14	68	34.56	1.22	128	48.26	0.39
9	15.37	0.16	69	33.29	1.27	129	48.65	0.33
					1.31			0.33
10	-17.01	+0.18	70	-31.98	+0.33	130	+48.98	+0.27
11	18.63	0.19	71	30.63	+0.32	131	49.25	0.21
12	20.23	0.21	72	29.24	1.39	132	49.46	0.16
13	21.80	0.22	73	27.82	1.42	133	49.62	0.09
14	23.34	0.24	74	26.36	1.46	134	49.71	+0.03
					1.49			0.51
15	-24.86	+0.26	75	-24.87	+0.26	135	+49.74	-0.03
16	26.35	0.27	76	23.36	+0.24	136	49.71	0.10
17	27.81	0.29	77	21.81	1.55	137	49.61	0.15
18	29.23	0.30	78	20.23	1.58	138	49.46	0.21
19	30.61	0.32	79	18.64	1.59	139	49.25	0.27
					1.62			0.51
20	-31.96	+0.33	80	-17.02	+0.18	140	+48.98	-0.33
21	33.27	0.34	81	15.37	+0.16	141	48.65	0.39
22	34.54	0.36	82	13.71	1.66	142	48.26	0.45
23	35.77	0.37	83	12.04	1.67	143	47.81	0.51
24	36.96	0.38	84	10.34	1.70	144	47.30	0.57
					1.70			0.49
25	-38.10	+0.39	85	-8.64	+0.09	145	+46.73	-0.62
26	39.19	0.40	86	6.92	1.72	146	46.11	0.68
27	40.23	0.41	87	5.20	1.72	147	45.43	0.73
28	41.23	0.42	88	3.47	1.73	148	44.70	0.79
29	42.17	0.43	89	-1.74	1.74	149	43.91	0.84
					1.74			0.45
30	-43.07	+0.44	90	0.00	0.00	150	+43.07	-0.90
31	43.91	0.45	91	+1.74	+0.02	151	42.17	0.94
32	44.70	0.46	92	3.47	1.73	152	41.23	1.00
33	45.43	0.47	93	5.20	1.73	153	40.23	1.04
34	46.11	0.48	94	6.92	1.72	154	39.19	1.09
					1.72			0.40
35	-46.73	+0.48	95	+8.64	-0.09	155	+38.10	-1.14
36	47.30	0.49	96	10.34	+0.11	156	36.96	1.19
37	47.81	0.51	97	12.04	1.70	157	35.77	1.23
38	48.26	0.50	98	13.71	1.67	158	34.54	1.27
39	48.65	0.50	99	15.37	1.66	159	33.27	1.31
					1.65			0.34
40	-48.98	+0.50	100	+17.02	-0.18	160	+31.96	-1.35
41	49.25	0.51	101	18.64	0.19	161	30.61	1.38
42	49.46	0.51	102	20.23	1.59	162	29.23	1.42
43	49.61	0.51	103	21.81	1.58	163	27.81	1.46
44	49.71	0.51	104	23.36	1.55	164	26.35	1.49
					1.51			0.27
45	-49.74	+0.51	105	+24.87	-0.26	165	+24.86	-1.52
46	49.71	0.51	106	26.36	+0.27	166	23.34	1.54
47	49.62	0.51	107	27.82	1.46	167	21.80	1.57
48	49.46	0.51	108	29.24	1.42	168	20.23	1.60
49	49.25	0.51	109	30.63	1.39	169	18.63	1.62
					1.35			0.19
50	-48.98	+0.50	110	+31.98	-0.33	170	+17.01	-1.64
51	48.65	0.50	111	33.29	+0.34	171	15.37	1.66
52	48.26	0.50	112	34.56	1.27	172	13.71	1.68
53	47.81	0.49	113	35.78	1.22	173	12.03	1.69
54	47.31	0.49	114	36.97	1.19	174	10.34	1.70
					1.14			0.11
55	-46.74	+0.48	115	+38.11	-0.39	175	+8.64	-1.72
56	46.12	0.48	116	39.20	+0.40	176	6.92	1.72
57	45.44	0.47	117	40.24	1.04	177	5.20	1.73
58	44.71	0.46	118	41.24	1.00	178	3.47	1.73
59	43.92	0.45	119	42.18	0.94	179	+1.74	-1.74
					+0.90			-0.02
60	-43.08	+0.44	120	+43.08	-0.44	180	0.00	0.00

The sec. var. is to be multiplied by the fraction of a century after 1900. The product will be numerically subtractive from R after 1900 and additive before 1900.

TABLE X.—Arg. I. *Action of Uranus.*

Arg.	(b. c. o)	(b. s. 1)	(b. c. 1)	(b. s. 2)	(b. c. 2)	Arg.	(b. c. o)	(b. s. 1)	(b. c. 1)	(b. s. 2)	(b. c. 2)
0	"	"	"	"	"	300	"	"	"	"	"
5	+0.04	+0.08	-0.18	0.03	0.03	305	+0.05	-0.18	+0.46	-0.07	-0.06
10	0.04	0.06	0.17	0.03	0.02	310	0.05	0.17	0.47	0.07	0.06
15	0.03	0.04	0.17	0.03	0.02	315	0.05	0.15	0.47	0.08	0.05
20	0.03	0.02	0.17	0.03	0.02	320	0.05	0.13	0.48	0.08	0.04
25	0.03	+0.01	0.17	0.03	0.01	325	0.05	0.11	0.47	0.08	0.03
30	+0.03	0.00	0.16	0.03	-0.01	330	+0.05	-0.10	+0.47	-0.08	-0.02
35	0.03	-0.01	0.16	0.02	0.00	335	0.06	0.08	0.46	0.07	0.02
40	0.02	0.02	0.15	0.02	0.00	340	0.05	0.06	0.45	0.07	-0.01
45	0.02	0.03	0.15	0.02	0.00	345	0.05	0.05	0.44	0.06	0.00
50	0.02	0.04	0.14	0.02	0.00	350	0.05	0.03	0.42	0.06	0.00
55	+0.02	0.05	0.14	-0.01	0.00	355	+0.04	-0.02	+0.40	-0.06	+0.01
60	0.01	0.05	0.14	0.01	0.00	360	0.04	-0.01	0.38	0.05	0.01
65	0.01	0.05	0.13	-0.01	0.00	365	0.04	+0.01	0.36	0.04	0.02
70	+0.01	0.06	0.13	0.00	0.00	370	0.03	0.02	0.34	0.04	0.02
75	0.00	0.06	0.13	0.00	0.00	375	0.03	0.04	0.32	0.03	0.02
80	0.00	-0.06	-0.13	0.00	0.00	380	+0.02	+0.05	+0.31	-0.03	+0.02
85	0.00	0.06	0.12	0.00	0.00	385	0.02	0.06	0.29	0.02	0.02
90	0.00	0.05	0.12	0.00	0.00	390	+0.01	0.08	0.28	0.02	0.03
95	0.00	0.05	0.13	0.00	0.00	395	0.00	0.10	0.27	0.01	0.03
100	0.01	0.05	0.13	0.00	0.00	400	0.00	0.12	0.26	-0.01	0.03
105	-0.01	-0.05	-0.13	0.00	0.00	405	0.00	+0.14	+0.26	0.00	+0.03
110	0.01	0.05	0.13	0.00	0.00	410	-0.01	0.16	0.26	0.00	0.04
115	0.01	0.05	0.13	0.00	0.00	415	0.01	0.18	0.26	0.00	0.04
120	0.01	0.05	0.13	0.00	+0.01	420	0.01	0.20	0.26	+0.01	0.04
125	0.01	0.05	0.13	0.00	0.01	425	0.01	0.22	0.27	0.01	0.04
130	-0.01	-0.05	-0.14	+0.01	+0.01	430	-0.01	+0.25	+0.27	+0.02	+0.04
135	0.02	0.05	0.14	0.01	0.01	435	0.01	0.27	0.28	0.03	0.04
140	0.02	0.06	0.14	0.01	0.01	440	0.01	0.29	0.28	0.04	0.05
145	0.02	0.06	0.14	0.02	0.01	445	-0.01	0.31	0.28	0.04	0.05
150	0.02	0.07	0.14	0.02	0.01	450	0.00	0.33	0.29	0.05	0.05
155	-0.02	-0.08	-0.13	+0.02	+0.02	455	0.00	+0.35	+0.28	+0.06	+0.04
160	0.02	0.09	0.13	0.03	0.02	460	0.00	0.36	0.28	0.07	0.04
165	0.02	0.10	0.13	0.03	0.01	465	+0.01	0.38	0.28	0.08	0.04
170	0.02	0.11	0.12	0.03	0.01	470	0.01	0.39	0.27	0.08	0.03
175	0.02	0.12	0.11	0.04	0.01	475	0.02	0.40	0.26	0.09	0.03
180	-0.01	-0.13	-0.10	+0.04	+0.01	480	+0.02	+0.41	+0.24	+0.09	+0.02
185	0.01	0.14	0.08	0.04	0.00	485	0.03	0.42	0.23	0.10	+0.01
190	0.01	0.16	0.07	0.05	0.00	490	0.03	0.42	0.21	0.10	0.00
195	0.01	0.17	0.05	0.05	-0.01	495	0.04	0.43	0.19	0.10	-0.01
200	0.01	0.18	0.04	0.05	0.01	500	0.04	0.42	0.16	0.10	0.02
205	-0.01	-0.19	-0.02	+0.05	-0.02	505	+0.04	+0.42	+0.14	+0.10	-0.03
210	-0.01	0.20	+0.01	0.05	0.02	510	0.04	0.42	0.12	0.09	0.04
215	0.00	0.21	0.03	0.05	0.03	515	0.04	0.41	0.10	0.09	0.04
220	0.00	0.22	0.05	0.05	0.04	520	0.05	0.40	0.07	0.08	0.05
225	0.00	0.23	0.08	0.05	0.04	525	0.05	0.39	0.04	0.08	0.06
230	0.00	-0.24	+0.11	+0.04	-0.05	530	+0.05	+0.38	+0.02	+0.07	-0.06
235	+0.01	0.25	0.13	0.04	0.06	535	0.05	0.37	0.00	0.06	0.07
240	0.01	0.25	0.16	0.04	0.07	540	0.05	0.35	-0.02	0.05	0.07
245	0.01	0.26	0.19	0.02	0.07	545	0.05	0.34	0.04	0.04	0.07
250	0.02	0.26	0.22	0.02	0.08	550	0.05	0.32	0.06	0.03	0.07
255	+0.02	-0.26	+0.24	+0.01	-0.08	555	+0.05	+0.30	-0.08	+0.02	-0.07
260	0.02	0.27	0.27	0.00	0.09	560	0.05	0.28	0.10	+0.02	0.07
265	0.02	0.26	0.29	0.00	0.09	565	0.05	0.26	0.12	0.00	0.07
270	0.03	0.26	0.32	0.01	0.09	570	0.04	0.23	0.13	0.00	0.06
275	0.03	0.25	0.35	0.02	0.09	575	0.04	0.21	0.14	-0.01	0.06
280	+0.03	-0.24	+0.37	-0.03	-0.09	580	+0.04	+0.19	-0.15	-0.01	-0.06
285	0.04	0.23	0.39	0.04	0.09	585	0.04	0.16	0.16	0.02	0.05
290	0.04	0.22	0.41	0.05	0.08	590	0.04	0.14	0.17	0.02	0.05
295	0.04	0.21	0.43	0.06	0.08	595	0.04	0.12	0.17	0.03	0.04
300	0.05	0.20	0.45	0.06	0.07	600	0.04	0.10	0.17	0.03	0.04
305	+0.05	-0.18	+0.46	-0.07	-0.06	605	+0.04	+0.08	-0.18	-0.03	-0.03

TABLE XI.—Arg. II. *Action of Saturn.*

Arg.	(b. s. I)	(b. c. I)	Arg.	(b. s. I)	(b. c. I)	Arg.	(b. s. I)	(b. c. I)	Arg.	(b. s. I)	(b. c. I)	Arg.	(b. s. I)	(b. c. I)
	"	"		"	"		"	"		"	"		"	"
0	+0.29	-0.20	120	+0.29	+0.16	240	-0.06	+0.27	360	-0.27	-0.74	480	-0.06	-0.32
5	0.30	0.19	125	0.28	0.18	245	0.07	0.26	365	0.27	0.05	485	0.04	0.33
10	0.30	0.17	130	0.27	0.19	250	0.09	0.25	370	0.27	0.07	490	0.03	0.33
15	0.31	0.16	135	0.26	0.20	255	0.10	0.25	375	0.27	0.08	495	-0.01	0.33
20	0.32	0.14	140	0.24	0.21	260	0.12	0.24	380	0.26	0.10	500	0.00	0.34
25	+0.32	-0.13	145	+0.23	+0.22	265	-0.13	+0.23	385	-0.26	-0.12	505	+0.02	-0.34
30	0.33	0.11	150	0.22	0.23	270	0.14	0.22	390	0.26	0.13	510	0.04	0.34
35	0.33	0.10	155	0.20	0.24	275	0.16	0.21	395	0.25	0.15	515	0.05	0.34
40	0.34	0.08	160	0.19	0.25	280	0.17	0.20	400	0.24	0.16	520	0.07	0.33
45	0.34	0.06	165	0.18	0.26	285	0.18	0.19	405	0.24	0.18	525	0.08	0.33
50	+0.34	-0.05	170	+0.16	+0.26	290	-0.19	+0.18	410	-0.23	-0.19	530	+0.10	-0.33
55	0.34	0.03	175	0.15	0.27	295	0.20	0.16	415	0.22	0.20	535	0.12	0.32
60	0.34	-0.02	180	0.13	0.27	300	0.21	0.15	420	0.21	0.22	540	0.13	0.32
65	0.34	0.00	185	0.12	0.28	305	0.22	0.14	425	0.20	0.23	545	0.15	0.31
70	0.34	+0.02	190	0.10	0.28	310	0.23	0.12	430	0.19	0.24	550	0.16	0.31
75	+0.34	+0.03	195	+0.08	+0.28	315	-0.24	+0.11	435	-0.18	-0.25	555	+0.18	-0.30
80	0.34	0.05	200	0.07	0.28	320	0.24	0.09	440	0.17	0.26	560	0.19	0.29
85	0.34	0.06	205	0.05	0.28	325	0.25	0.08	445	0.16	0.27	565	0.20	0.28
90	0.33	0.08	210	0.04	0.28	330	0.26	0.06	450	0.14	0.28	570	0.22	0.27
95	0.33	0.09	215	+0.02	0.28	335	0.26	0.04	455	0.13	0.29	575	0.23	0.26
100	+0.32	+0.11	220	0.00	+0.28	340	-0.26	+0.03	460	-0.12	-0.30	580	+0.24	-0.25
105	0.31	0.12	225	-0.01	0.28	345	0.27	+0.01	465	0.10	0.31	585	0.26	0.24
110	0.30	0.14	230	0.03	0.28	350	0.27	0.00	470	0.09	0.31	590	0.27	0.23
115	0.30	0.15	235	0.04	0.27	355	0.27	-0.02	475	0.07	0.32	595	0.28	0.21
120	+0.29	+0.16	240	-0.06	+0.27	360	-0.27	-0.04	480	-0.06	-0.32	600	+0.29	-0.20

TABLE XII.—Arg. III. *Action of Jupiter.*

Arg.	(b. s. I)	(b. c. I)	Arg.	(b. s. I)	(b. c. I)	Arg.	(b. s. I)	(b. c. I)	Arg.	(b. s. I)	(b. c. I)	Arg.	(b. s. I)	(b. c. I)
	"	"		"	"		"	"		"	"		"	"
0	+0.41	+0.44	120	-0.25	+0.52	240	-0.53	-0.08	360	-0.04	-0.53	480	+0.54	-0.21
5	0.39	0.46	125	0.27	0.51	245	0.52	0.11	365	-0.01	0.53	485	0.55	0.18
10	0.37	0.48	130	0.30	0.49	250	0.51	0.14	370	+0.02	0.54	490	0.56	0.15
15	0.34	0.50	135	0.32	0.47	255	0.50	0.16	375	0.05	0.53	495	0.57	0.13
20	0.32	0.51	140	0.34	0.45	260	0.49	0.19	380	0.08	0.53	500	0.58	0.10
25	+0.29	+0.53	145	-0.36	+0.43	265	-0.48	-0.22	385	+0.11	-0.53	505	+0.58	-0.07
30	0.26	0.54	150	0.39	0.41	270	0.47	0.24	390	0.14	0.52	510	0.59	0.04
35	0.24	0.55	155	0.41	0.39	275	0.45	0.27	395	0.16	0.52	515	0.59	-0.01
40	0.21	0.56	160	0.42	0.37	280	0.44	0.30	400	0.19	0.51	520	0.59	+0.02
45	0.18	0.57	165	0.44	0.34	285	0.42	0.32	405	0.22	0.50	525	0.59	0.05
50	+0.15	+0.58	170	-0.46	+0.32	290	-0.40	-0.34	410	+0.25	-0.49	530	+0.59	+0.08
55	0.12	0.58	175	0.47	0.29	295	0.38	0.36	415	0.28	0.48	535	0.58	0.11
60	0.10	0.59	180	0.49	0.27	300	0.36	0.38	420	0.30	0.46	540	0.58	0.14
65	0.07	0.59	185	0.50	0.24	305	0.33	0.40	425	0.33	0.45	545	0.57	0.17
70	0.04	0.59	190	0.51	0.21	310	0.31	0.42	430	0.35	0.43	550	0.56	0.20
75	+0.01	+0.59	195	-0.52	+0.18	315	-0.29	-0.44	435	+0.38	-0.42	555	+0.56	+0.22
80	-0.02	0.59	200	0.52	0.16	320	0.26	0.46	440	0.40	0.40	560	0.55	0.25
85	0.05	0.59	205	0.53	0.13	325	0.24	0.47	445	0.42	0.38	565	0.53	0.28
90	0.08	0.58	210	0.53	0.10	330	0.21	0.48	450	0.44	0.36	570	0.52	0.30
95	0.11	0.58	215	0.54	0.07	335	0.18	0.49	455	0.46	0.33	575	0.50	0.33
100	-0.14	+0.57	220	-0.54	+0.04	340	-0.16	-0.50	460	+0.48	-0.31	580	+0.49	+0.35
105	0.17	0.56	225	0.54	+0.01	345	0.13	0.51	465	0.50	0.28	585	0.47	0.38
110	0.19	0.55	230	0.54	-0.02	350	0.10	0.52	470	0.51	0.26	590	0.45	0.40
115	0.22	0.54	235	0.53	0.05	355	0.07	0.53	475	0.53	0.24	595	0.43	0.42
120	-0.25	+0.52	240	-0.53	-0.08	360	-0.04	-0.53	480	+0.54	-0.21	600	+0.41	+0.44

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